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POPULAR Computing WEEKLY

1-7 May 1986 40 Rock Rd C Vol 5 No 18

Two found guilty in hackers trial

- **Prestel hackers found guilty of forgery**
- **Details of how they broke into the system**
- **Both intend to appeal**

Full details below and inside

HACKERS trial defendants Robert Schifreen and Steve Gold were both found guilty of forgery last week, and were fined £750 and £600 respectively. They were also ordered to pay £1 000 costs each.

The two had been charged under the 1981 Counterfeiting Act after a series of Prestel security breaches between November 1984 and February 1985. Schifreen himself admitted to breaking into the Duke of Edinburgh's mail box.

The method the two used to gain access to the system revealed text-book lapses of security on Prestel's part. The

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Word Wizards entry form p35

SPECIAL SUPPLEMENT

COMMODORE

- *Microprose – master of simulations (see above)*
- *Word processing packages compared*
- *80-column displays made easier*
- *Commodore show – a preview*

COLOUR FEATURE

A gallery of prizewinners in our Touchmaster competition

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Photo courtesy Baltimore Maritime Museum

THE FIRST AUTHENTIC SUBMARINE SIMULATION

MICRO PROSE

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Published by Sunshine Publications Ltd 12 13 Little Newport Street, London WC2H 7PP Tel 01-437 4343 Telex 296275 **Typeset by** Publishers Reprographics Services Ltd 4 Roger Street London WC1 **Printed by** Greenaway Harrison, Suhen Road, Southend-on-sea Essex **Distributed by** S M Distribution London SW9 Tel 01 274 8611 Telex 261643

Popular Computing Weekly. Tel: 01-437 4343.

ABC

How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles and any accompanying programs should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here – so please do not be tempted. We cannot guarantee to return your programs – so please do not send your only copy. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

QL rebirth for ZX Microfair?

AN announcement on the attempted buy-out of rights to the QL is expected to be made by the time of next week's ZX Microfair

Leon Heller, chairman of Quanta, the QL user group, told *Popular Computing Weekly* he knew the details of the bid by a consortium of QL support companies (see *Popular Computing Weekly* April 17) but he was unwilling to reveal them. He did however feel that Amstrad would be willing to sell the rights and suggested that the upshot of the deal would be the long-awaited QL 2, with a full 68000 processor 512-640K Ram and an internal 3½ inch disc drive

Add-on supplier Micro Peripherals has also been spoken of as a possible buyer for the QL, but spokesman Ian Donaldson dismissed the suggestion. "We're not a micro manufacturer" he said, "we're a supplier of add-ons." He said he'd welcome any takeover of the QL, but felt that any company doing so would have to be very, very big

Meanwhile dealers are reporting difficulty in obtaining stocks of all Sinclair products



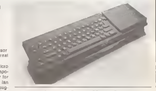
Micronet adds a problem page and goes hi-res

COMPUTER consultancy Interlex is now providing a technical support section on Micronet starting at page '800900#. The new service is open to all Micronet users and although it's aimed mainly at business subscribers should be able to answer interfacing and software queries for Amstrad PCW, Atari ST, AMiga Apricot, IBM and IBM compatible machines

Interlex is also offering Micronet users access to its telephone hotline query service for £25 a quarter rather than the normal £35

Micronet itself has recently introduced high resolution graphics for BBC subscribers. These, says Micronet, are "photo quality" (see below) and can be accessed by using special software downloadable from the Net. The BBC service is currently experimental and if successful will be extended to other micros





Two found guilty in hackers test case

◄ Continued from page 1

court was told how the two had accidentally discovered telephone numbers for private Prestel computers. Schifreen then typed in a line of twos and was asked for a four digit password. By typing 1234 at this point, he discovered a testing facility which gave him access to all Prestel boxes

The security lapses had actually been reported to Prestel by Schifreen on October 23 1984, but this seems to have cut little ice with Prestel or the court. Wire taps installed after this date showed that Schifreen and Gold were still accessing the system, and the prosecution went ahead

The discovery of the breaches last year caused a storm and forced Prestel to tighten up its security. The mechanism used to prosecute hinged on the jury accepting that the two were guilty of "forging a computer disc" recording information from Prestel's computers

The 1981 Act was used because there is no specific legislation covering hacking, and the trial has therefore been something of a test case

Schifreen and Gold, who regard themselves as having done Prestel a service by uncovering the security lapses, are understandably bitter at the verdict and intend to appeal. Steve Porter, solicitor for Schifreen, says they will be appealing against both conviction and sentencing. Grounds against conviction will be based on "legal technical arguments" which will be discussed over the next few weeks

Prestel itself hasn't emerged unscathed. Subscribers whose files have been tampered with, the court was told, are now able to sue the system operator for damages under the Data Protection Act. This provision is backdated to cover breaches from September 12 1984 onwards

Nemo educational robot is pisnned

NOLAN BUSHNELL, founder of Atari, and Steve Wozniak, co-founder of Apple, are to team up to produce a new educational toy called Nemo. Wozniak's company, CL9 Inc is currently developing a remote control device while Bushnell's Axlon Inc produces the Petster range of robot pets. CL9 is to be merged into Axlon, with Wozniak and Bushnell becoming joint chairmen

It's not clear what Nemo will be but it's likely to be related to the Bushnell's robot pets. These were developed because Bushnell feels that although it isn't currently possible to produce robots that operate on a human level, animal simulations are possible. The Petster range therefore consists of battery powered dogs and cats

Amstrad show date

Amstrad watchers may have been confused by our story last week on the Amstrad PC. The Amstrad show organisers have rescheduled it to June 13-15. So our story "Amstrad's PC look set for May launch" should have read "Amstrad's PC may launch in June". Knuckles have been July rapped



The joystick to revive Revs

MEEDMORE has come to the rescue of owners of Firebird's *Revs* on the 64 with its new Hotshot Revs Special analogue joystick The stick is switchable between proportional non-centring action allowing variable acceleration on stick forward and controlled braking on stick back, and conventional Commodore analogue use It retails for £12 95

Details from Meedmore, 28 Farriers Way Netherton, Merseyside L30 4XL (051 521 2202)

Pilgrim fathered

CRL is launch *Pilgrim* a text adventure for the Commodore 64, at the end of this month The game revolves around a search for the legendary Guardian the only one who can save the land of Meridian from destruction at the hands of the Silvian invaders An everyday story of impending apocalypse for £7 95

Details from CRL, 9 Kings Yard Carpenter Road, London

P-80 pair join Epson's budget printer range

EPSON is bidding for the low cost printer market with the P-80 range The two basic models the P-80 and P-80X are light and include rechargeable batteries for remote use Like the Brother HR5 they can use thermal paper or carbon ribbon to produce an image on paper

Both printers offer emphasised enlarged, condensed and underlined styles and the P-80X also includes superscript, subscript and seven bit-image graphics modes The P-80 has two bit image modes

The P-80 is £160 while the P-80X is £250

Commodore 64 gets a cartridge Eprommer

EPILOG-1 is an Eprom system for the Commodore 64 and 128 and costs £144 95 It consists of a programmer unit a mains powered UV eraser an operating system cartridge and one 8K programmable cartridge Extra cartridges cost £17 95 each, or £44 95 for three

Details from Bircal Instruments, 11 Southfields Court, Sutton Common Road, Sutton Surrey SM1 3HJ, (01-644 0981)

Locoscript extras with Amstrad discs

HI-TECH Business Systems is selling 3 inch Amstrad PCW discs with a selection of Locoscript templates installed on them The discs cost £45

Details from Hi-Tech Business Systems, St Peter's House Gower Street Derby DE1 1SB (0332 381657)

Education from Willow

WILLOW Software is to release two new educational programs for the BBC Electron and Amstrad 464 and 6128 *Early Words* is intended to teach three to six year olds while *Early Maths* provides four to eight year olds with training in basic arithmetic The programs cost £7 95 for tape £9 95 for BBC disc and £12 95 for Amstrad

Details from Willow Software. (0934 834066)

Letters

What price a QL?

Amstrad's pricing policy is beginning to make the old Sinclair look like Acorn. Sinclair sold the QL for £199. Some shops managed to sell it for £145. Once a computer has been developed and proven, it can be a licence to print money.

Here are my conservative guesses as to what it would cost to push the QL in a manner that Sinclair Research never did.

Prices for complete systems (components)

Item	Price
Monitor (colour)	£100
QL Printer	£100
QL	£100
Disc Interface	£50
Disc Drive	£50
10 Discs	£5
512K Ram Pack	£50

These are my prices inflated to account for the usual overheads incurred in retailing micros.

Business package
Colour Monitor
QL Printer
QL and Eidersoft's ICE
Disc drive and interface
10 Discs – one with Psion Xchange on it
Total = £430

Home user Package
Colour Monitor
QL
Disc + Interface + 10 discs
A Book on Psion Xchange
A Game
Total = £325

Similar packages for hobbyists and games players might cost, on my estimates, £245 and £230 respectively. I think these kinds of packages could mop up the competition.



'It bit Sir Keda Joseph'

Now comes the reason why Alan Sugar would not dream of offering these kind of options. He has his own problems. The 464 and PCW8256 are in less demand than the 6128 and PCW8256. The 464 and 8256 are not immortal but third party manufacturers will offer upgrades for the machines so that they are in line with the 6128 and 8256. Phasing out those models should be relatively easy with customers able to upgrade.

Atari and *Commodore* will be more than ready for Christmas: they sell expensive computers which are nevertheless a potential and real threat.

Business purchasers will see an Amiga or 520ST with a user friendly desktop sitting next to an Amstrad with either a power up message or a game running. Possibly next to the Amstrad will be a QL with ICE. Not as chic as the American micros but with a more fashionable price tag. Draw your own conclusions.

The QL has been, literally, in suspended animation for the past year. When all the fun and games went out of finding bugs there was mostly silence. The QL has a substantial user base, the right kind of software and has long since repaid its development costs. When was it last advertised?

I R Bruntlett
Coleraine A I
BT51 3LA

First service

I would like to write and tell you about an exceptional piece of service I have just received from Arnor.

I bought *Promerge Plus* on Rom, having been using *Protext* – also on Rom – for some time with a KDS 8-bit printer port interface. I was very happy indeed with this combination, which involves a program which sets up the interface and sets the screen attributes the way I want them, then calls *Protext*.

When I fired up with *Promerge Plus*, everything I tried worked beautifully except that all the printer would produce was garbage.

I called Arnor and spoke to a programmer there, Gavin Ebury. Over the phone I read him the KDS set-up program; by the afternoon he called me back with an amended program. It worked first pop, perfectly.

I think this was wonderful service to an ordinary customer.

Peter Ceresole
London
SW14

Oxford blues

I purchased a Pascal language disc from Oxford Computer Systems. On trying this disc I could not get it to compile. I returned the disc to Limbic Systems UK at the same address as OCS. With the disc I enclosed £15 for a back-up disc.

That was January 11. On February 11 I sent a letter, but I have had no reply.

The disc was to be used for Open University homework, the lack of it means that I have to travel to a computer centre to try a program – about 25 miles by rail.

William McGill
50 William St
Helensburgh
Dunbartonshire

Unfortunately Oxford Computer Systems is now in receivership, which could explain why you have not had any reply.

There are, however, other Pascal programs available for the Commodore 64. You could make inquiries about Orpheus's *Pascal 64* (£24.95 on tape), or First Publishing's *Pascal 64* (£34.95 on disc). Orpheus's phone number is 0767 51481, First Publishing is on 07357 5244

Puzzle

Puzzle No 205

When Mrs Hex took delivery of a new china dinner service her husband Professor Otto Hex was considerably more interested in the box in which it had been mailed.

'This is curious', he mused, 'the number of *cubic* inches which make up the volume is exactly three times the number of *square* inches which make up its surface.'

The box was a cube with each side eighteen inches in length, and so the Professor was quite correct as the volume in cubic inches (5832) was three times the area in square inches (1944).

This set the Professor to wondering if there were any other examples again with each dimension an exact number of inches, but this time with all three dimensions *different*.

What is the smallest box with this property?

Solution to Puzzle No 201

The books were originally arranged 5 3 4 6 on the top shelf and 1 7 8 2 on the bottom. The fraction so formed, 5346/1782, is exactly 3.

```
10 FOR A=1 TO 2
20 FOR B=1 TO 9
30 IF B=A THEN 260
40 FOR C=1 TO 9
50 IF C=A OR C=B THEN 250
60 FOR D=1 TO 9
70 IF D=A OR D=B OR D=C THEN 240
80 LET DENOM=A*1000+B*100+C*10+D
90 LET NUM=DENOM*3
100 LET NUM$=STR$(NUM)
110 LET T=0
120 FOR N=1 TO 4
130 LET V=VAL(MID$(NUM$,N,1))
140 IF V=A OR V=B OR V=C OR V=D OR V=0 OR V=9 THEN LET T=1
150 NEXT N
160 IF T=1 THEN GOTO 240
170 FOR N=1 TO 3
180 FOR M=N+1 TO 4
190 IF MID$(NUM$,N,1)=MID$(NUM$,M,1)
THEN LET T=1
200 NEXT M
210 NEXT N
220 IF T=1 THEN GOTO 240
230 PRINT NUM$;"/";DENOM;" = 3"
240 NEXT D
250 NEXT C
260 NEXT B
270 NEXT A
```

We are required to arrange the digits 1 to 8 into a numerator and denominator (four digits in each) such that the fraction so formed is equivalent to 3. The program computes all possible denominators such that all four digits are different. Also the left hand digit can only be 1 or 2 as these are the only values which can give a numerator in the required range.

Once the denominator is evaluated it is multiplied by 3 to find a possible numerator. Finally, all eight digits are tested to ensure that there is no duplication of digits. There are four possible values printed out, but the problem stated that none of the volumes was in its original position. Therefore all but one of these solutions can be eliminated as in each of these cases at least one of the volumes occupies its correct position.

Winner of Puzzle No 201

The winner is W H Naiteris of Penpriek, Mid Glamorgan, who will be receiving £10.

Rules

The closing date for puzzle 205 is May 27.

KIREL

KIREL the 3D arcade challenge for the thinking player
Seventy mind stretching screens each one more complex than the previous but providing its own individual challenge. Obvious or obscure – can you get through before your time or stamina runs out? Can you find the transporter networks, snatch the energy supplies and defuse the bombs before you are blown up (or sucked into oblivion)? Can you avoid the lurking terrors, conquer invisible obstacles and immovable barriers?

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- ☐ Addictive T shirts £

Cheque/Postal Order/Access

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Address

Tel

Letters

Give us a clue

I would like to make an appeal through the pages of your magazine, to the writers of computer program instruction manuals

I have recently purchased *Superfile* and *Tasprint*, and I find that the manuals supplied with both programs assume that the person reading it understands computer jargon and is conversant with such things as machine code and Ramtop! I for one am not familiar with either of these subjects, and so find that both programs are unusable, as I cannot get either of them to print out to my Brother HR-5 printer

Masterfile is another program let down by its manual however I have managed to fathom this one out with some assistance from a friend

I have written to both of the companies concerned and am now waiting for a reply But why should I have to write? There is no hint given in the advertisements for these programs that some programming knowledge is required All manuals, regardless of what they are for should be written as simply as possible Surely the author should assume that the reader has not got a clue and start from there

CWEM (O) A W Lewsey
Helensburgh
Dunbartonshire

Goonie's guide

I thought that some of your readers who own a Commodore 64 and are puzzled by some of the problems within US Gold s *Goonies* game might like to know that a hint/instruction guide is now available

It is a 12-page booklet and thus too big to run on the letters page Although it is not an encyclopaedia of every detail of the game, the tips will help you gain the game objective without giving everything away

Anyone wanting the guide should send an SAE and 50p(to cover printing costs) to the address below

Keith Sherling
32 Springfield Park
Kinross
Tayside
Scotland

ALL THE FUN OF THE FAIR

ZX MICROFAIR

It s that ZX Microfair time of year again and as usual *Popular Computing Weekly* has a special free offer for our readers

We ve got 100 tickets to give away – all it'll cost you is the price of a stamp

We re not even going to tax your brains – all you have to do is fill in the coupon and send it to the address below, applying for up to two (no more than two per application please) free tickets

You haven t got much time to lose either The Microfair takes place on May 10, at the Horticultural Hall, Greycoat Street, London SW1. So, don t delay – we need your applications here by May 6

The address is ZX Microfair Offer *Popular Computing Weekly* 12-13 Little Newport Street, London WC2H 7PP

Please rush me 1/2 (delete as appropriate) tickets to the ZX Microfair on May 10

Name ______________________

Address ______________________



B·B·B·BOUND TO BE A HIT..
"10 levels of fun make this torture excellent value for money. Nova rating. Definitely one of those 'just another go' games. Game of the month February" – Computer Gamer
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Touchmaster Competition Winners

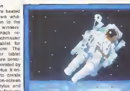
The quality of many of the entries to our Touchmaster graphics competition was so high, we reckoned you should see for yourselves what can be done with a micro and some imagination

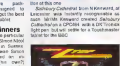
It's a shame we only had five Touchmaster graphics tablets to give away since for more than five of our entries were deserving of recognition. Just selecting a shortlist gave the *Popular* office any number of headaches.

In the issue dated March 20, in conjunction with our special feature on graphics, we asked you to send in a work of art any work of art, created with any graphics package – or none at all. Anything, so long as it had not been published elsewhere previously.

The response was overwhelming. Having waded through the pictures we eventually agreed on nine masterpieces shown on these pages which were worthy of at least a prestigious *Popular* honour able mention.

After more heated argument we whittled it down to the five prize winners who will each receive a Touchmaster graphics tablet for their machine. The Touchmaster tablet is a pressure sensitive pad operated by a plastic stylus. It enables you to create pictures on-screen using the stylus and the manufacturer also produces Touchware packages designed to help you get the best from the tablet.





The winners

First (in no particular order) to Simon Nicol of Hove in Sussex for *The Swan*. Simon Nicol used an in-house (his own?) utility to create the picture.

Next to join the prizewinners is Iain Murray of Dunfermline in Fife who managed to make outer space as colourful as possible with *Bruce McCandless*. Tony Hart's *Art Master* helped in the production of this one.

Salisbury Cathedral from N Kenward, of Leicester was instantly recognisable as such. Mr/Ms Kenward created *Salisbury Cathedral* on a CPC464 with a DK'Tronics light pen but will settle for a Touchmaster tablet for the BBC.



Above: The Swan by Simon Nicol
Below: Salisbury Cathedral by N Kenward
Above right: Bruce McCandless by Iain Murray
Right: Eliminator by Christopher Owczarek



A *Castle by the Lake* may not be the most original of artistic themes – we had several castles by several lakes – but we reckoned the quality of Alan Diamond's picture merited a prize, especially since he used his own personally written sketch program.

The fifth Touchmaster tablet goes to a Spectrum owner Geoff Burton of Middlesbrough for *Dragonlance* created using Softek's *The Artist* package.

Honourable mentions

Christopher Owczarek of High Wycombe just missed out with his version of the album cover of Z Z Top's *Eliminator* on the BBC despite all the efforts of *Popular's* resident ZZ Top fanatic and another self-penned graphics utility. Gary Milton's *Robin*, on the Commodore 64 used Audiogenic's *Koala Painter* and added an educational flavour to the competition.

Michael Sleight of Doncaster went for

the nostalgia vote with *I Only Get It for the Pi-Man* We've got *Melbourne Draw* to thank for that one

Last honourable mention goes to Alex King, of Bournemouth, and *Who Stole the Banana? He Did!*

Many thanks to everyone who entered the competition and we'd like to wish everyone who didn't win better luck next time

Touchmaster tablet winners

Simon Nicol Furze Hill Hove Sussex N Kenward Leicester Forest East Iain Murray Dunfermline Fife Alan Diamond Wembley Middx Geoff Burton Middlesbrough

If you didn't win – or didn't enter – but would like a Touchmaster tablet, the product is available from Panorama Office Systems (Touchmaster division) Baglan Industrial Park Baglan Port Talbot West Glamorgan SA12 7DJ (0639 820310) The tablet costs £49.95 and is available for Spectrum Commodore 64 Dragon 32 and BBC B machines



Above: Robin by Gary Milton





Who Stole the Banana by Alex King

Above: I only get for the Pi-men by Michael Sleight Below right: Castle by the Lake by Alan Diamond Below. Dragonlance by Geoff Burton





Repairing the damage

A Muir explains how to carry out simple repairs to your joystick

Joysticks and fast furious arcade games just don't mix. And it's always the joysticks that end up losing. What is worse, they always break down just as I'm doing well on *Elite* or *Match Day*. Then of course, after I've pulled it free of the TV screen (which is where the unfortunate joystick usually gets hurled) I have to fix it. By the time I get back to the game I've lost my thread and I'm soon dead, or out of the Cup Final.



Fixing your own joystick is much easier than you might think. I remember my first encounter with the innards of the infernal things. I was quite disappointed when I found I could immediately understand what went on in there.



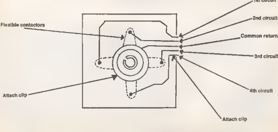
Unless the shaft has snapped the integrated circuit has blown or a vital part of the mechanics has snapped off mending your joystick should be a piece of cake. It will probably only entail a spot of solder or putting some spring back into the flexible contactors. If your shaft has snapped forget it. I have tried any number of glues and none of them were strong enough to last five minutes. The same applies to a vital part of the mechanics breaking in two – unless you are very lucky you've had it.

If you're familiar with soldering and flexible contactors you should be able to fix your joystick with your eyes closed. If not read on carefully.

Inside your joystick there are just five circuits not counting the ones in the chip of course. See the diagram. All these circuits have one common return, ie, there are five half circuits and these are completed or closed by one other half circuit (the return).

Pressing your fire button or moving your joystick causes one of the five to come into contact with the one return. So if you can still get some movement out of your stick it must be one of the five circuits that has come adrift. It should be an easy enough matter to find the break in the circuit and put it right. If on the other hand, you can get no movement at all out of your stick then it must be the common return that has gone wrong. Again it should be an easy matter to spot the break in the circuit and put it right. It is highly unlikely that anything will be wrong with the printed circuit board and most of these faults will be broken or loose wires.

The most common failing among joysticks is the fire button. If anything is going to go wrong the fire button will. Both Quickshot and Spectravideo models



(which are identical by the way) have the most shameful arrangement for the fire button I have yet seen It is quite likely to fail after even moderate use never mind the battering I give them If you have one of these joysticks and the fire button has packed in then the wire from the fire button has probably worn through at the base of the shaft You will have to replace this wire, I m afraid, either with a stronger wire (shielded wire is good) or modify the design slightly The best modification I have found is to drill a small hole in the base of the casing in the place where the shaft rests and then drill another hole in the back Then pass the wire out through the first hole back in through the second and solder the connections again Be careful not to crack the casing or to drill the hole too large

Now a lot has been said about solder If you have a duff joystick and are just about to rush out and buy a soldering iron so that you can fix it, try to buy a low voltage one The connections inside your joystick are very small things and you don t need a great big soldering iron that will melt everything in sight

Another interesting exercise will give a clapped-out joystick a new lease of life Get yourself two pieces of wire connect each piece of wire to a paper clip and attach them to the printed circuit board in a manner similar to that shown in the dia-



gram For the next part of the trick you have to type in the short program below If you have a Spectrum and a Kempston interface you will be able to copy this program exactly For other computers or interfaces you will have to make slight modifications All the same you should get the idea from the listing

```
10 LET X = IN 31
20 PRINT AT 0,0;X
30 GO TO 10
```

Once you have typed in the program and made sure the joystick is connected, *run* it.

You should see a 0 at the top left hand corner of the screen If you touch the two wires together you will see the 0 change to 1 or 2 or 4 or 8 If your fire button is working try pressing that and you should get 16

These figures are based on a Kempston interface of course, and if you have a different one the values will naturally be different

If you do not see what possible use this could be try changing line 20 to

```
IF X = 2 THEN BEEP .5,10: BEEP .5,20:
BEEP .5,10: BEEP .5,20
```

By experimentation you will find that you can return 32 values from your joystick all the numbers between 0 and 31 I have managed to build a touch tablet using all these values but it takes time and a bit of patience

At the other extreme I ran a buzzer-type game at a fund-raising event using just one value

With a smattering of imagination there a plenty you can build Don t be afraid to experiment, since you cannot damage your computer (unless you connect the wires up to the mains which is monumentally foolish)

Better mouse trappings for AMX

It's a truism of this industry that computer hardware is useless without software and the success of any micro is dependent on the quality of the programs available

AMX has learnt the lesson well If it is to be singled out for credit it is in the way that it had produced some first class software for its mouse and thus generated enough sales to inspire third party companies to write for it as well

AMX *Pagemaker* has been covered for the BBC before but new versions are notable in that all reported problems of incompatibility with obscure DFS s (more to do with the protection techniques than the software itself) are being tackled and overcome and there is an ever-growing range of printer dumps The package can also now be controlled from joystick or keyboard, so although the mouse really does work like a dream with it, you can spread the cost

Until I used it I didn t really appreciate what a gem of a program this is The resolution of the screen mode and of the print is higher than most competing utilities and it is extremely flexible

The graphics are perhaps the weakest point. you get a mini-art utility included but there are none of the extensive graphics libraries of *Fleet St Editor* However AMX promises a support release very soon including extra utilities and graphics Once you do have a picture on screen it can be stretched, cut and pasted, superimposed, etc Another nice feature is the ability to convert colour pictures into shaded designs in Mode 0

The package has its own mini word processing abilities but you can also import files from either *View* or *Wordwise*

Super Art is a very versatile and powerful Mode 1 artist program that incorporates features from the earlier releases *AMX Art, AMX Paintbox, AMX Utilities* and then some Almost every limitation that could have been pointed to in the original release has been overcome giving you features such as stippled colour fill, cut and paste rotate zoom etc One of its most important features is the ability to work on screens buffered to disc such that an A4 size picture can be produced When dumped to one of the supported colour printers these can look superb

Again *Super Art* can be used with keyboard or joystick (the former is perhaps essential for some detailed work to overcome the wobbly hand syndrome) It comes as a 16K Rom and disc of support routines

Tony Kendle

Program *AMX Super Art and AMX Pagemaker* **Micro** BBC B/Master **Price** Art & mouse £89 95 Page £49 95 **Supplier** Advanced Memory Systems 166-170 Wilderspool Causeway, Warrington WA4 6QA

Top Notch

Andrew Pennell has written a number of good books on the QL Motorola 68008 so it is not too surprising that he should have also produced an excellent assembler for hobbyist and programmers alike

Apart from the Assembler *Devpac* comes with a screen editor to help with the writing of programs A debugger is also included that is made up of disassembler and monitor The monitor is a very flexible piece of software that can do a great deal of useful functions like dynamic multiple breakpoints

At the moment the top spot in assemblers is dominated by Metacomco However Mr Pennell says that his Assembler is more powerful and faster than any of his competitors This I totally agree with and in addition, this development package is well documented and a great deal easier to handle

Matthew Palmer

Program *Devpac* **Micro** QL **Price** £39 95 **Supplier** Unisoft, 180 High Street, North Dunstable LU6 1AT

A Bridge almost (but not quite) far enough

CP s latest *Bridge Player* in its series for a number of micros is the PCW 8256/8512 version

For anyone who hasn't come across Bridge programs for micros, the standard format is that you play South, while the computer plays the East, West and North hands throughout the bidding and play Good Bridge programs don't cheat by taking account of the distribution of all 52 cards and they also handle some of the better known conventions such as Stayman and Blackwood

This one holds up on these three counts (well it understands half of Blackwood) and it's a lot better than CP s 6128 version *Bridge Player 3* The play has been tidied up considerably you now get the feeling that your computer opponents are sitting up paying attention and keeping some kind of card count East and West however, still get caught out not drawing their trumps early enough

The bidding follows a standard Acol pattern and is in most cases sound although North your computerised partner is timid to the point of cowardice and you still can t get it to initiate Blackwood This means that on borderline slam hands you ll need to be bold – there s nothing more frustrating than discovering you have a lay-down Grand Slam when the contract's Two Clubs

Complete newcomers to Bridge could with patience learn a reasonable game through trial and error on *Bridge Player* especially with the sit back and watch option where the computer selects all the moves

Where this program really scores is in its speed and range of options You are given five choices of speed from lethargic through slow medium and fast, to instant Translated into actuality, medium is very fast, and slow is just right if you want to think about your play

Options include full rebid and replay facilities – useful for trying alternative bids to goad North into a spot of derring-do setting a specific point-count for your hand instant abandonment of the hand – for when you re about to be utterly humiliated – and listing of the deal to the printer

I can t help comparing every new Bridge program with my long-time favourite Serin's *Grand Slam* for the C64 While *Grand Slam* can be unbearably slow its card play still surpasses everything else I've seen including, I m afraid *Bridge Player*

Christina Erskine

Software *Bridge Player* **Micro** PCW 8256/8512 **Price** £19 95 **Supplier** CP Software, 15 Despard Road, London N19 5NP

Ghost gobble a go go

Gobble Gobble for the QL is at least relatively cheap. Beyond that well can you guess what the game it is from the title? Yep fraid so. It's Pacman again.

Gobble Gobble is not actually a bad version of the game, extras in the game. Objects that travel through walls and some nasties other than the dreary old ghosts.

It looks OK I guess, about as good as a Spectrum equivalent with quite a lot of colour. *Gobble Gobble* is a fairly

except that in the early screens you (deliberately apparently) move around so lethargically the sense of threat is reduced to about nil. Believe me, if you can t crack it on the first screen of this one, you d better hang up your joystick for ever. It does get faster.

To be generous there a few complete version of Pacman – do you think that s worth £9 95? Maybe if you're absolutely addicted. **Graham Taylor**

Program *Gobble Gobble* **Micro** QL **Price** £9 95 **Supplier** Eigen, 45 Bancroft Road, Widnes, Cheshire WA8 0LR.

Playing the fall guy

Rock n Wrestle was Melbourne Houses s big follow up to *Exploding Fist*. Despite the glowing quote credited to *Popular* on the back of the Amstrad version of the game (a bit of creative out-of-context-taking by MH) the review of the Commodore version had some doubts about playability.

Rock n Wrestle is probably too clever. The range of wrestling moves and procedures is so vast (23 possible moves) that it detracts heavily from the playability of the game.

It looks good, just as good on the Amstrad the 3D movement is certainly a technical achievement, but I doubt you ll really want to spend much time actually playing it.

What *Rock n' Wrestle* proves, perhaps is that there is a limit to what you can expect people to do with joystick orientated, reaction testing games. *Fist* was enough this is too much. **Graham Taylor**

Program *Rock n' Wrestle* **Micro** Spectrum **Price** £9 95 **Supplier** Melbourne House 60 High Street, Hampton Wick, Kingston Upon Thames, Surrey KT1 4DB

The shoot em up blasts back

If you are going to do an arcade game spin off then this is the way to do it. Incentive trod the straight and narrow in creating *Moon Cresta* by actually buying the licencing rights. This meant a) that it could, in so far as it was technically possible do an exact a copy as it wished and b) it didn't have to give it some silly surrogate name like *Space Cresta* or *Moon Attack*.

Incentive s *Moon Cresta* was first released on the Spectrum and has recently been converted to a number of other machines. In this case the Amstrad. Doing the conversion job properly certainly pays off. All the features of the original game have been retained, even down to the right blips and tunes.

For a game that was in the arcades several years ago *Moon Cresta* remains surprisingly fresh and addictive. All shoot em ups are not alike, and the really good ones retain their appeal over many years.

For those too young to remember *Moon Cresta* is one of those 'spaceships against the waves of aliens' affairs where the art of the game is accuracy of blasting, quickness of reactions (getting out of the way) and stabbing those defensive shields into action.

Incentive s *Moon Cresta* is a perfect copy of the original and if it seems simple compared to current games it is and always was a game and a half. **Graham Taylor**

Program *Moon Cresta* **Micro** Amstrad **Price** £7 95 **Supplier** Incentive Software, 54 London Street, Reading RG1 4SQ

Bounce, trundle and slurp

Whenever I read that my mission is to collect 25 keys my heart sinks, especially when I also have to rescue someone called Zelda. *Bug Eyes II* did not therefore fill me with confidence. However Actually it has a few redeeming features.

Bug Eyes II is very *Manic Miner*, things bounce, trundle, leap and slurp around getting in the way and losing you lives. There are platforms lifts seemingly impossible to collect keys that require you to stand with one foot over the edge and leap whilst moving forward type problems etc etc. The difference is that everything is on a bigger scale. *Bug Eyes* features almost *Frak* scale sprites all nicely detailed. **Graham Taylor**

Program Bug Eyes II **Micro** BBC **Price** £7 95 **Supplier** Audiogenic, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Sounds like a job for . . . Redhawk

Redhawk is an unusual adventure from Melbourne House It uses a style of presentation so utterly obvious and appropriate to some kinds of computer game it is astounding that nobody to my knowledge, has thought of it before – comic strips



It works more or less like a standard graphically illustrated adventure, the difference is that the graphics are a series of frames like those in comic strips, which scroll along as an action takes place Similarly when characters speak to one another you see a speech bubble form and the words scroll through it

Redhawk himself is a slightly tongue-in-cheek super hero A mild mannered photographer for the *Daily News* in his ordinary life he becomes Redhawk, superhero merely by saying 'Kwah (superhero transformation methods have become more sophisticated since the days of Clark Kent and the telephone boxes) His task is to defuse a bomb in a local power station and at the same time clear the streets of criminals – too much concentration on either one of these activities will cause problems Either there won t be enough time to get the bomb or he suffers loss of credibility amongst law-abiding citizens

The graphics work very nicely indeed not too detailed but the scrolling comic strip technique is very pleasing For its innovatory features *Redhawk* gets full marks The problem with the program is that the actual adventure is decidedly dodgy There isn't much by way of a parser and the vocabulary seems fairly restricted All too often the computer fails to understand a perfectly logical command and there is no attempt at making interesting and varied 'you can t do that type responses

I cautiously welcome *Redhawk* although it is too expensive It s worth a look but I suspect the basic ideas can be (and will be) better implemented on later games

Graham Taylor

Program *Redhawk* **Micro** Spectrum-Commbdore 64 **Price** £8 95 **Supplier** Melbourne House, 60 High Street, Hampton Wick Kingston Upon Thames Surrey

Bloody deeds in the land of Meridian

It is gratifying to see a well-known company release a text-only adventure, since many companies will not touch an adventure unless 'pretty pictures are included

I am a firm believer that rich imaginative text descriptions combined with a solid story make for an enjoyable game Indeed some adventurers would go further and say that pictures actually detract from the imagination *Pilgrim* is all this and more Set in the violent Land Of Meridian author Rod Pike has excelled in his word-painting of this cruel and war-torn land

The plot concerns the invasion of the peaceloving residents of Meridian who led a simple and happy life, watched over by the 'Guardian' who lived, so it was said, deep in the craggy mountains of Meridian and would, at some time in their darkest hour of need provide the ultimate help

Suddenly, one dark stormy night the hordes of the warlike Silvians attack your village leaving behind them death and destruction and you the sole survivor of this onslaught, vow to find the Guardian and feel the legend

Despite mostly two word commands you'll find much to do and investigate But be warned this is no easy task for the faint-hearted or novice adventurer However it is a task you will enjoy immensely

R Garrett

Program *Pilgrim* **Micro** Commodore 64 **Price** £8 95 cassette £12 95 disc **Supplier** CRL Group plc, CRL House 9 Kings Yard, Carpenters Road, London E15 2HD

A cut price journey to the Apocalypse

It's the not too distant future and you're driving down the M1 Sir A Scargill is in charge of a deep sea mining project your in-car computer is in charge of the driving and all is well with the world

But as an adventurer you should know that an idyllic situation like this caninevilably only mean but one thing – a full blown, John Wyndham-style apocalypse!

The Spore looks like a cheap offering in more ways than one The packaging is very basic Indeed – but don t be fooled this is a quality product in low budget clothing

That s exactly what lies in store – or in *Spore* – because you're soon in an apparently deserted hospital with a strange green dust covering everything (could the title be a clue?)

The plot has some definite shades of *Day of the Triffids*, but that s no bad thing Despite having both legs in plaster you intend to investigate

We re in the land of *Quill* and *Illustrator* again but they re used to good effect, with simple pictures that appear quickly, using shading effectively

Their use is far more imaginative than with most similar offerings and they are fully credited on the cover There are one or two spelling errors which is a pity as it spoils the professional look

The adventure is rather linear at first, forcing you into the crash, but this is forgivable because it's not only amusingly written, it also manages to generate real suspense which – in the end – is what separates adventures you play to the end even if it takes months to solve from those you abandon after a dozen locations

The gradual appearance of paragraphs keeps you hanging on for the outcome of events I ve also yet to see the appearance of the dreaded compass direction commands that make most adventures seem so artificial

All in all an excellent piece of interactive fiction from a new software house and at a budget price, available from the address below

John Minson

Program *The Spore* **Micro** Spectrum 48K **Price** £2.00 **Supplier** K-Soft 118 Kingsway, Ossett W Yorks WF5 8HQ



Under the spell

This week Tony Kendla presents some vital clues for those struggling with Spellbound – straight from the author, David Jones

I know that a lot of people will be pleased to hear that we have received the long awaited tips for *Spellbound* from the hand of the author David Jones, complemented by some letters on the subject sent in by our readers David has been kept busy by his latest project *Knight Tyme* so it was impossible to predict exactly when his tips were going to arrive but now that they have done I m sure that nobody will mind if we get straight on with them rather than concentrating on *Marsport* as promised

By the time you read this both the Commodore version of *Spellbound* and the Spectrum 128K version of *Knight Tyme* (quite extraordinary value at the price) should be in the shops The 48K Spectrum *Knight Tyme* and 128K *Spellbound* are expected sometime in May – even more good news is that David says he will let us have some clues that apply to both versions of *Knight Tyme* when everything is released (but that's no reason not to beat him to it if you get somewhere with the game)

David s next game will 'probably not involve Magic Knight because I want to test a new way of doing arcade adventures, but there will be future games with the same character '

Before we get on with David s tips can I give thanks to Jason Watkins of Gravesend for his pointers which I will slip in with the rest in appropriate places Another interesting letter comes from Eric Ellis of Fishponds in Bristol who was intrigued by David s comment of a couple of weeks ago that as far he knew no one had finished *Spellbound* Eric writes I m sure a number of people like myself will write to say that we have *done* it (I had over 30 hours of time left) ' Actually Eric you are the only one so far, so congratulations

Spellbound is the best game I have played a bit like an Agatha Christie book full of clues false trails and red herrings Just when you think you are getting somewhere you either blow yourself up or fall into a pit but at least with a touch of humour you are told how to avoid the same fate next time

Spellbound had me really hooked for about four weeks playing it into the early hours of the morning, making odd notes on every scrap of paper I could find – I had countless sleepless nights thinking about how to get over walls, how to keep Thor alive etc I came to a complete standstill at 52% for 10 days and was convinced that the game was wrong ' This midpoint puzzle seems to be troubling a lot of people and is the hardest bit in the game but David has asked us not to print the solution just yet I will just say that the answer involves Thor and Erland

Eric also writes that there is one point in the game that may be a bug – on the second floor wall if you summon any three characters you can just walk through the wall – it could be a bug or another trick because if you do this you are unable to finish the game! Strength can be a bit of a problem but if you keep Florin under control and near the Teleportpad it's no trouble to pop back for a top up Thor can be a pain as he seems to have no will to live at all and snuffs it despite many feeds but the game can be completed without even feeding him once which will surprise many people

Cryptic hints

Well after setting the scene with those cryptic hints let s get on with the nitty gritty from David We ll let you know the secret of Thor next week

First he was surprised at the start address given in the pokes from Paul Miller a couple of weeks ago – the actual start address of the game is obtained by



Randomise Usr 26627 One of the frequent comments we get is that readers find it refreshing that a programmer of David's quality doesn't try to stop people from hacking into the game I suspect this is partly due to Mastertronic s pricing policy and I m not sure how much say David would have in it if the cover price was £10 or so

Lack of energy

Anyway regarding *Spellbound*, David confesses In the loader the start address was 26624 If any editing of the loader is performed the binary representation of the loader also gets automatically changed to become address 26624 and the game then jumps to a *Hackercatch* routine I wrote I didn t do this to stop hackers, just to have a bit of fun with them Any hacker worth his or her sodium chloride should cope with no problem

On to the proper clues Read the Crystal ball every few minutes since there are a lot of clues to be had there and they will change as time passes When you are not in the lift the ball can also be used to locate characters It is useful to keep the transporter pad in the lift since you will then be able to get to different floors quickly from almost anywhere

If you are dying fast through lack of energy then you must use the bottle of restorative fluid from the left most room of the roof garden Give this to Florin and then take it back for full energy Then give it back to him etc You could of course avoid this problem by using the pokes published

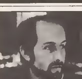
' Before you can command anybody you must fetch one of the objects shown on the cassette cover from the roof garden

Once you have dropped the glowing bottle and released the Banshee it is useful to command her to help Banshee has a series of clues that will change in a similar fashion to the ball

Lady Rosmar will help you later if you give her something to go with what she is carrying (ie, of the same category of object) She will help you in the room where you find the object

Samsun is a sporting chap and would like to have something decent to throw before he can help you with the object that he has "Elrand Helfelen does not want or need the saxophone There is some other instrument he would like to use

The answer to more puzzles next week



The compilation craze hits adventures

Tony Bridge turns his attention to compilation tape comprising ten adventures, from Central Solutions

Central Solutions' *Ten Pack* was for me a Nine Pack as one of the adventures *Time Quest* was missing from the tape sent to me for review but unfortunately this omission was soon rectified, threefold Hugh Walker, old friend, immediately fired off his copy to me, and at the same time, I received another copy from Mr Kneller of Harrow Central Solutions itself also supplied me with a copy of the errant adventure. Thank you all very much

I have long since given up trying to fathom out the relationship between Central Solutions Doubleplay and Logic Sales – the various adventures seem to go round and round these companies, and many of those *Quill* d programs that have been mentioned in these columns have found their way on to tapes from one or other of the labels

Time Quest, from the *Quill* of Peter L Robinson, is, I'm glad to say, well worth looking at, and makes the *Ten Pack* even better value than I had thought. Your hero starts his quest in a strange land whose king has enjoined you with promises of great wealth to find the seven fabulous treasures – methinks that these treasures are not going to let up their secrets lightly! The location descriptions are rather sparse and problems will only be solved by careful matchings of words to deed For example *Push* the boulder to reveal a useful object tucked away beneath (for some reason), but later you must *Slide* a table There is no clue as to the word which must be used, so it s a case of out with the thesaurus and work through the synonyms

This is a pretty good though very small adventure for beginner an expert will not be diverted for long. However, despite the short text descriptions, there is a good atmosphere about the game and there is plenty to do while problems are being chewed over And it s nice to see *The Quill* getting lots of mentions in the form of magic words and other gimmickry Not worth an awful lot I feel on its own though well worth a look at in the company of the other nine adventures on the *Ten Pack* More details from Central Solutions Ltd, 500 Chesham House, 150 Regent Street, London W1R 5FA

Now to a *Quill* d program on the Amstrad Longtime readers of The Corner will remember Neil Scrimgeour from many months ago (have you finished *Ring of Darkness* yet, Neil?) He has recently completed his own adventure for the Amstrad *The Lost Phirious* released through his own software house, Vidipix This is the first *Quill* d program that I've seen on the Amstrad, and it isn t too bad It s not brilliant, either, but then the £2 50 asking price is not going to break the bank if you want to have a look It s the first part of a 'quadrilogy' concerning your quest to recover the space cargo hauler *Phirious* and its mysterious contents the story starts on board the *Cesiopia*, a stranded space ship that you on your way to Earth in search of more info on the fabled *Phirious*, have stumbled across drifting helplessly in space, just like the *Marie Celeste* As you board the stranded hulk, your vessel explodes leaving you to sort out the mess

Stranded hulk

The scenario is hardly original and the layout and appearance of the adventure (despite the name of the company there are no graphics) are rather unprepossessing and haphazard – sometimes you are told *Exits S,W* and at other times, *Exits are East North* The problems will have you scratching your head for a while though careful scrutiny of messages will be of some use An example here is the robot that kills you off with monotonous regularity until you realise what he has said before despatching you 'Disgusting!' And here you are *carrying* the fig leaf! Wearing it of course allows you past the robot – there are a couple of other locations which are similarly impassable until a simple routine is followed And if you find a problem insoluble, don't as suggest by the *Help* command write to me as I haven't been given a help sheet either!

Four tapes

Although I wouldn't normally find it possible to recommend this adventure above others (I find such responses as 'You cannot do that, my old goos-goog' and 'what next, thy Mega-brain' particularly stupid and boring), the extended scenario spread over four tapes and the suspense of finding the fabled treasure of *The Phirious* may keep the player engrossed One other point is worth mentioning the progam tells you where to start your map so there ll be no running off the sheet of paper after the first half-dozen locations, very useful!

Vidipix can be contacted at 125 Occupation Road, Corby, Northents NN17 1EG

Adventure Helpline

Going bananas? If you are stuck in an Adventure with nowhere to turn do not despair – help is at hand.

Fill in the coupon explaining your problem send it to us and a fellow adventurer may be able to help

Remember – the system only works if those adventurers who have solved the puzzles get in touch Every week is Save An Adventurer Today (SAAT) week!

Adventure .... on (Micro) ....
Problem ....
....
Name ....
Address ....
....

ADVENTURE HELPLINE

Sphinx on Electron. Where can I find the mouse to shift the elephant? How do I go west at the hall of the mountain king without the goblins tearing me limb from limb? Why is it I can only occasionally open the clam in the oyster room? What are the correct steps to open the clam? J B Lamont 18 Halbert St, Shawlands Glasgow Scotland

The Hobbit on Spectrum I entered the goblin's dungeon and found a trapdoor but I cant open it. Hayden Price, 96 Manor Road, Upper Deal, Kent

Message from Andromeda on Amstrad I cant

get the glowing sphere off the sunken dish upon the glass pedestal Any help much appreciated C C T Eng 14 Amner Rd London SW11

Heroes of Karn on Amstrad. I can t find the white potion or key for the golden gates to the north I ve freed Beren and later – what now? Can offer full solution on Jewels of Babylon Send SAE to C C T Eng 14 Amner Rd London SW11

Castle of Terror on C64 I'm stuck in the 2 part, and can t go west through drape Tom Ellenrieder, 1 Brackenhill Sandy Lane Surrey KT11 2EW

Adventure Quest on C64 Who is the companion and where? Where are the four elements? Tom Ellenrieder 1 Brackenhill Sandy Lane Surrey KT11 2EW

Hitchhikers Guide on C64. I can t pen the screen door Brendan Bradley 64 Ashwood Road, Clondalkin, Dublin 22, Ireland

Lord of the Rings on Spectrum I can t get the broken medallion from the green knight Simon Lilley 21 Roberts St Rushden Northants

Mordon's Quest on Spectrum How do I get the torch across the quicksand? How do I open the south wing door? Gary Ball, 14 Old Mill Avenue, Sutton Leach St Helen s, Merseyside

The Helm on Spectrum How do I use the keyboard without falling through the trapdoor? Pauline Garnett 13 Hogarth Court, Artists Way Andover Hants

Claymorgue Castle on Spectrum I have completed half of the adventure and want the full solution Many adventures to swop! Pedro Diego Nunes R Quelimane 12 Carraveilas 2775 Parede Portugal

The Hobbit on Spectrum I've got the ring – how do I get out of the goblin s tunnels? Barry Mayes, 33 Briscoe Road Pitsea, Basildon, Essex

Spiderman on Spectrum How do you make the web formula? Barry Mayes 33 Briscoe Road, Pitsea Basildon Essex

Castle of the Skull Lord on Electron How do I get out of the village once I ve completed the tasks? Mrs J M Smith 310 Twyford Avenue Portsmouth, Hants

Sphinx Adventure on Electron. After 12 months – no score, no progress G F Monnoyer 26 Raylands Way, Leeds LS10 4AQ

Bored of the Rings part 2 on Spectrum Where is the coin? How do I open the desk? How do I get out of the maze and morons? James Cameron, 6 Windy Hill, Hutton Brentwood, Essex

Mordon's Quest on C64 How do you defeat the gladiator? N Hooks 3 Overstone Court Old Catton Norwich Norfolk

Marie Celeste on Spectrum. Where are the dymothium ingots? Alan Hughes, 22 Tyddyn Te, Menai Bridge Gwynedd

Castle of Terror and Red Moon on C64 C of T how do I kill Dracula? RM – how do I get past room of Missing light? Jonathan Dale 110 Thomson Drive, Codnor Derbyshire

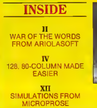
Demon Knight on Dragon 32. Any clues most welcome Mrs M Green 10 Rowan Close London Rd Estate Thetford Norfolk

Kentilla on Spectrum. Where do I find the bow and Arrow? R C Collinson address as above

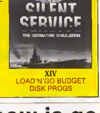
POPULAR
Computing
WEEKLY



COMMODORE COMPUTERS



INSIDE



Although overshadowed by the news of the Amstrad takeover of Sinclair, the story of Commodore's marketplace struggle continues. With new products such as the astonishing Amiga on the way, and recent releases such as the 128 now settling into a steady sales pattern there has never been more activity from the US giant.

This week's supplement covers some of the hottest topics in the Commodore world We give you a preview of the 7th official Commodore Show which will mark the UK launch of the Amiga, look at the Microprose simulation programs which stretch the 64 to its limits; tell you how to get an 80-column display on the 128 without spending £300 on an RGBI monitor; and look at the range of word-processors from Batteries Included distributed here by the increasingly influential Ariolasoft. Something for every Commodore micro user! ◄

CBM Show is go

The seventh official Commodore show looks like having plenty to offer besides the UK launch of the long-awaited Amiga PC

The show, at the Novotel in London's Hammersmith on May the 9-11th has, according to organisers Database Exhibitions, attracted unusually high numbers of advance ticket sales.

For many visitors the main attraction will be the Amiga Village, where the impressive new 68000-based machine will be given its first extensive public airing. Software from both US and UK developers will be on show, including TDI's Pascal-based compiler which is priced at £99, and Precision's redesigned Amiga version of the top-selling 64/128 program Superbase. Precision will also be demonstrating packages from Californian company Aegis, including the Animator graphics program.



Although the major focus of interest may be the Amiga, the 128 and 64 will not be forgotten Already there are promises of sixty new products on show

- Timeworks will be showing three new products; an eighty-column word processing package for the 128, Word Writer an enhanced version of Swiftcalc 2 a spreadsheet, and the 128 version of Personal Financial Planner
- Evesham Micros plans to show three new products. **Freeze Frame Mark 2** is an improved version of the popular disk transfer cartridge, offering improved disk filing efficiency and tape save speed Like the original Freeze Frame, backups produced with the cartridge can be run without the cartridge in place and Evesham claim that it is totally transparent to all software. The **Quickdisk + Upgrade** is another new product, offering a speed improvement for the 1541 disk drive of 10x on loading, 6-8x on saving.

The final new product is the **Dolphin DOS**, a German parallel interface which improves the loading speed of the 1541 by up to 25 times Saving times are improved by up to 12x sequential file speed by 10x and relative files by 3x The disk format routine leaves a massive 749 blocks free for data storage, and there's a machine code monitor and other features included

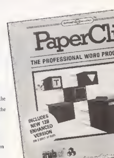
- Vanguard will be showing the Starblazer joystick, costing £11 95 and the space game Ciphoid
- Wigmore House is to release The Artist, a hi-res art package for the 64/128
- CA Distribution from France has three new products, including an emergency power supply, a printer power pack and a 'power cartridge' for the 64
- Sagesoft's entire range of accounts packages will be on show, featuring the new versions for the 128.
- Anirog has two new games, Thai Boxing for the 64 and Winter Events for the C16 and Plus/4
- Supersoft's digital drum machine for the 64, priced at under £40 will be on show for the first time, along with an update for the Microvox digital sampler, and an assembler for the C16-Plus/4

In addition, a 120-seat theatre is being built within the hall, to provide non-stop events throughout the show These will include music performances by keyboard whizz Rick Wakeman and backing band Duel, a film show featuring The Commodore Story, and special events organised by individual exhibitors.

The £20,000 theatre will be situated on the lower floor of the Novotel, and will be used to stage the launch of the Amiga on the first morning.

Advance tickets are available from Database Exhibition Contact them for details on 061-456 8835 We'll carry a full report of the show after the event ◄

COMMODORE'S BATTLE OF THE WORDS



The development of more powerful home computers, many with built-in or bundled disk drives, has encouraged the development of better and better utility software packages. However, this has meant that the top-line packages have become so complex as to discourage the casual user. The obvious solution for wide-based software companies is to deal with range of software covering all levels of interest and ability. This is Anolasoft's aim with the wordprocessing packages from the American company Batteries Included.

The first package **New Paperclip** is a complete professional word processor for the C64 or C128. The package comes with a double sided disk with C64 programs on one side and C128 programs on the other. Also included is a security key (dongle) which plugs into one joystick port, and a user manual.

The manual is a spiral bound, 128 page book with very small but clear text, and is very well laid out and readable. It includes a tutorial session at the start of the book to show how to use Paperclip quickly and easily.

Backup

The disk supplied with Paperclip is not protected, so a backup should be made as soon as possible. It is not necessary to backup both sides as each side has all the necessary programs for each version. The C128 version allows the use of an 80 column monitor. I must admit that I had great problems with the 80 column mode, as the 1st column kept disappearing off the edge of my Ferguson TV/Monitor. I will give Anolasoft the benefit of the doubt and assume that it is my lead, monitor that is causing the trouble. Changing from 40 to 80 column has been made a lot easier as the program has been written to detect if the 40/80 switch has been pressed. If it has the output is automatically changed. This eliminates the need to restart the system every time you wish to change the video output. All the editing functions are the same between the two versions.

Paperclip is one of the most powerful word processors that I have come across on the Commodore so far. It will perform all the usual functions of entering text and amending text very easily and quickly. The power of Paperclip becomes apparent when you start looking at the additional features. Text can be saved to either tape or disk and in 'screen format' characters (standard) or CBM ASCII for transferring to other programs.

For ease of use, Paperclip allows up to 52 common phrases to be assigned to memory, and with just two key presses the phrase can be entered into your text. Text can also be moved from file to file very easily as well as appending, from disk, onto your current file.

When using columns of data in Paperclip there are several special commands which allow easy use. The columns can be moved, added, deleted or sorted from within the text editing mode.

To aid the laying out of a document which is larger than the monitor that you are using, Paperclip has unique method of showing how the finished document will look. When the text is ready to view, select video output and the page appears on the screen. The unusual feature is that all the words have been changed to small boxes. As the boxes are different lengths to represent the word length, this gives a very clear idea on what the page will look like. On the C64 version this method of display will only work on 80 column text. On the C128, Video mode will display 40, 80 or 160 columns on a composite type monitor. On an RGBI type monitor widths of 80, 160 or 320 can be viewed, though only document widths of up to 250 columns can be created on Paperclip.

The other main feature of this package is the ability to create and print out standard form letters, mailing list and labels. Paperclip can store data as a sequential file. It can then read data into a document that has been prepared with spaces left for the additional data to be entered automatically on printing. Paperclip can also use data prepared by other programs, provided that it is in the correct format.

Printer

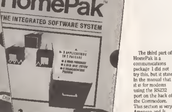
When it is time to printout the text Paperclip will allow headers, footers, page numbering, indentation and many other formatting commands found on the more expensive word processors. Most printers are supported by Paperclip, but if you have a really obscure printer then a facility is provided to allow you to set up your own printer definition file.

This is a very powerful and professional package, very popular in the States, and should satisfy the most exacting micro user.

The second package is **HomePak**. This is a reasonable word processor with the addition of a database and a communications program. This package is designed for the user who does not need a full word processor, just something which is quick and easy to use. The program is written for the C64 mode.

The word processor is in the medium range between a professional package such as 'Paperclip' and a text editor like 'Cut & Paste'. All the necessary edit and save text functions are included but the number of

CHOOSING A WORD-PROCESSOR CAN BE A DAUNTING TASK – HOW DO YOU AVOID GETTING STUCK WITH AN UNSUITABLE PACKAGE? TONY HARRISON-SMITH LOOKS AT ARIOLASOFT'S OPTIONS



extra functiona is reduced All the commands are displayed in a number of menus, which makes learning how to use the package very quick. Some of the more frequently used commands are available direct from the keyboard to save time and effort. All the commands are in easy to remember words, rather than the more sophisticated commands on some other packages. Text can be moved around in blocks and copied to other sections if required. a search and replace function is also included for finding and correcting a string of text. HomePak also has a preview option similar to Paperclip The main difference is that this mode only works on 80 column documents.

The printing of the text allows heads and footers on the pages as well as the positioning of margins. If your printer is capable of it, enhanced, underlined and bold printing is supported HomePak Will allow data from the built in 'Database' to be included into the current text being edited. The main criticism is that the manual is of the bound book type rather than the spiral bound type as in Paperclip This is a problem because while you are trying to use the package, the manual keeps closing!

Editor

HomePak also includes a very simple database which allows three pieces of information to be stored on each record The format for a record is Subject/Tag/Object. The maximum record length is only 80 characters. The good thing about the database is the enquiry language that is used to control it. For example it you enter "Who's Mike?", it will display all the information stored under the subject Mike. This can be done on any of the three fields in the record.

The third part of HomePak is a communications package I did not try this, but it states In the manual that it is for modems using the RS232 port on the hack of the Commodore. This section is very American and is always talking about Compuserve. As this is an American database, I do not think many of you will be using it; TOO EXPENSIVE!

The third Ariolasoft package in this trio is **Cut & Paste**. This is a really good text editor It is designed for people who will only want to write a letter occasionally, and cannot see the need in buying an expensive word processor The package is for the new and occasional user and should be an example to all others who think that their software & manuals are user friendly The manual is clearly written, simple and a delight to read This is the only package that came with a data disk ready for sua, so that if you bought this package, you could take it home and load it up ready for sue without buying anything else.

Duckshoot

The text editing is limited to edit, save and load Blocks of test can be moved by 'Cutting' the text out and storing it in a buffer and then 'Pasting' it back onto the document in its new position This makes it very simple but very effective All the commands needed to use this package are on a scrolling menu at the bottom of the screen (very much like the duck shoot menu of **Compunet**) This method of menu helps in making this package very easy to sue, because you do not need to switch between text and the menu Some new users get very worried when their text disappears and a manu appears!

Cut & Paste will allow blocks of text to be indented and tabs to be set. Forced peges are supported as well as automatic page numbering. In keeping with the user friendly nature of the package, disk housekeeping commands allow the formatting of a disk as well as deleting and cataloguing programs on the disk. The one thing that highlights the friendliness of this program is that when it comes across an error it starts the message with "Sorry, ". The only thing I found missing in the manual is that but nowhere does it tell you to go into C64 mode in order to use Cut & Paste on the 128

PRODUCT	MICRO	PRICE
New Paperclip	64, 128	£44 95
HomePak	64 128 in 64 mode	£34 95
Cut & Paste	64, 128 in 64 mode	£24 95

Supplien Ariolasoft, 68 Long Acre, Covent Garden, London WC2. 01-836 3411

In conclusion, if your applications require a lot of text and editing, then Paperclip is the package to use. There is a spelling checker available for it. Spellpack, which is due to be released in a package with Paperclip in May

For average use of text and editing facilities, HomePak is acceptable. The manual was the only diseppointing thing in an otherwise reasonable package.

Last but by no means least, if you only have occasional need for a word processor then I would recommend Cut & Paste to anybody This is a really great package, though the casual user might have second thoughts about the price ◄

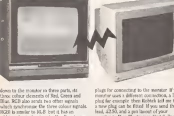
THE 80-COLUMN PROBLEM

HAVING SPLASHED OUT ON A C128, HOW DO YOU AVOID PAYING £300 FOR AN 80-COLUMN MONITOR? TONY HARRISON-SMITH ON INTERFACES, ERIC DEGHAYE ON DIY

There are many different types of video monitors available for home and office computers. The main types are RGB, RGBI and Composite Video. Unfortunately up to now 80 column mode on the C128 has been limited to RGBI only, since the 80 column signal is routed out only through the RGBI port. To solve this problem three companies have come up with various leads and interfaces to remedy this situation.

Before I go into more detail about these devices, I will try and explain in layman's terms what the difference is between each type of monitor All the above terms describe how the picture is transmitted from the computer to the monitor Composite Video sends the picture and the colour down as one signal, and the signal is then decoded in the monitor

RGB on the other hand sends the picture down to the monitor in three parts, its three colour elements of Red, Green and Blue. RGB also sends two other signals which synchronise the three colour signals. RGBI is similar to RGB but it has an additional signal intensity Needless to say generally, none of the above methods of picture transmission are compatible with each other



Interface

There are now several different interfaces to allow 80 column mode on different types of monitors.

If you use a Commodore 1701 or 1702 monitor then Trilogic can provide two different interfaces to allow 80 column display

The first, and most expensive of all the Interfaces reviewed, is the **Vidcon 2** at £49.95 This is a mains operated unit which converts the RGBI signal to separate video and colour signals. On the unit itself is a switch for 40 or 80 column mode This unit allows the full 16 colours to be used.

The second lead from Trilogic is the **TML30** which is a more reasonable price of £9 95 The catch is that it only gives a monochrome display The TML30 is not mains powered, it's just a cable that connects to the front video input socket on the monitor

Display

For RGB monitor users there are a lot leads available Robtek supply a lead called the **Magic Monitor Interface** which is priced at £14 95 This lead plugs into the video outlet and the RGBI outlet on the C128. At the other end of two very short leads, only about 2 feet long, there are two phono plugs for connecting to the monitor If your monitor uses a different connection, a DIN plug for example then Robtek tell me that a new plug can be fitted If you send the lead, £2.50, and a pin layout of your monitor to Ram Electronics, Unit 8, Redfield Industrial Park, Redfield Lane, Church Crookham, Aldershot, Hampshire, GU13 ORC they will fit a plug for you.

Trilogic supply 3 leads for RGB monitors. The first is for the Ferguson MC01 TV/Monitor This lead is the **TML34**, which costs £19 95 It also includes a colour interface which is powered from the cassette port. The cassette can still be used with the leads plugged in The interface allows 8 colours to be displayed on the monitor

The other two leads from Trilogic are the **TML35** for Hitachi TV/Monitors, and the **TML35** for the Fidelity CTM1400 TV/Monitor Both these leads retail at £14 95

As the above review has shown most types of monitors can now be used with the C128 in 80 column mode. If your TV/Monitor is not mentioned above, than Trilogic say that special leads can be made to order If you supply them with the make and model of your TV/Monitor, input socket connections and input signal requirements, they will gladly quote a price to you.

For owners of Microvitec monitors, which have an RGB TTL input, hope is offered by Cascade better known for their games compilation packages.

Despite assurances from Commodore and Microvitec thet RGBI and RGB TTL (Transistor/Transistor Logic) are totally incompatible, Cascade claim to have come up with a suitable interface lead, providing an eighty column display in full colour at the cost of £19 95

Also available are a series of adaptors, costing £5 which allow the interface to be used with any RGB monitor Cascade would like potential purchasers to contact them with details of what adaptors are required, and the company also plans to bring out an interface incorporating a sound amplifirer (since many RGB monitors have no sound output) if there is sufficient interest. Again contact Cascade if you would like more details of this and other plans.

Standard

The standard cable is recommended for use with the Microvitec 1431 dual standard monitor, which would then be able to display 40 column and 80 column at the flick of a switch.

Although we have not had the opportunity to test the lead – and Cascade aren t giving away the details of how it's done – this would seem the ideal choice for users who have already splashed out on the high-quality Microvitec monitor and are reluctant to part with it. ◄

Contacts

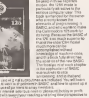
Cascade, Suite 4, 1-3 Hayura Crescent Harrogate, North Yorkshire, HG1 5BG, Tel. 0423-504526

Robtek, 36 Market Place, Falloden Way London NW11 6JP Tel 01-209 0118

Trilogic, 29 Holme Lane, Bradford, BD4 0QA, (shop) 392 Tong Street Bradford

COMMODORE 128
Advanced Programming





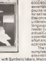
The Commodore 128 can be used in three separate modes: the 128K mode is particularly attractive to the serious computer user. This book is intended for the owner who already knows the elements of programming in BASIC, and who wants to make the Commodore 128 work for its living. Because the BASIC of the 128 is so much superior to that of the older C64 model much more can be accomplished without knowledge of machine-code, and this book fully stretches the abilities of the new BASIC. The focal point of each chapter is the application of BASIC subroutines to data processing, and to that end many very useful and original subroutines are included. You will learn for example, how to work with pointers in BASIC, and how to speed up a string sort by the use of pointers to array members.

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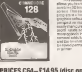
A complete course with text and software: this step by step package introduces the complete beginner to 6502/8502 programming. The assembler provided with the course is especially designed for self teaching purposes so that once a basic understanding of assembly language is established the reader can transfer to the actual Commodore built-in assembler with a minimum of effort and be free to explore the application of machine code.

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The assembler allows programs to be written easily in assembly language and these it translates automatically into machine code.

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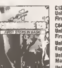


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. . . OR THE DIY SOLUTION

Anyone who has bought a Commodore 128 and expected to run the display in 80 columns with a TV or 1701 monitor must have had a bit of a disappointment, as Commodore implies that if you want 80 cols, you have to fork out the necessary £300 for one of their new 1901 RGBI monitors. However, Commodore doesn't tell you the full story You can actually implement 80 columns quite easily, though only in monochrome, on any display system which possesses a video signal input

There are two monitor output sockets on the back of the C128 ● – Composite video signal (the round DIN plug, description on page C 5 of the manual) which gives only 40 columns ● – RGBI output, (wrongly labelled user port' in page C-6 of the manual) which gives only 80 columns.

The selection of the type of display used is done either at power up, or by doing a run/stop-restore while the 40-80 key is depressed (or not) But how do you make good use of these sockets without buying a dedicated monitor?

If we look at the pinout description of the RGBI socket (see fig 1) we see that pin 7 is labelled 'monochrome' The signal coming from this pin is actually standard video output, but monochrome only This signal can be used to drive ANY monitor which has a video input, like the Commodore 1701 where the video in' socket is at the front.

To have a truly versatile system, you will also need another connection in the 40 col. socket, in order to have sound and 40 column. (Note that the sound output will only come through the 40 col socket, the RGBI does have sound output) Fig. 2 shows the pinouts of that socket, and we see that there is a video out pin, giving a colour output. All we need to do now is to make a suitable collection of leads.

Take about 1 metre of braided cable and solder the braid at one end on pin 1 of the RGBI 'D connector, then solder the core to pin 7 (see fig. 3) Close the plug case and solder the core of the cable at the other end on the centre pin of the video in plug, then solder the braid on the outer pin This will be the 80 column output.

The other plug needs two length of cable, one for the video signal the other for the audio Solder both braids on pin 2 of the din plug and the core of the first cable on pin 3 of the din plug. At the other end of this cable, solder a plug to match the audio in socket of your monitor in the same fashion as described above (see fig. 4) Solder the core of the other cable to pin 4 of your plug, and again solder a matching plug for the video in socket of your monitor Close the plug cases and there you go, you have an 80 column adaptor

To use, select the type of display you require, and plug the corresponding plug into your monitor; you do not need to remove the audio plug.

Alternatively, you can put a single pole double throw switch for easy selection.

This cable will work on any monitor which has video and audio in sockets (Note that on the 1701 monitor you must change the position of the switch at the back) If you use the family's tv and have a video recorder, plug this cable into the video in the VCR and you will have 80 columns on a standard TV ◄

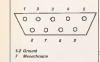


Fig 1 RGBI socket pinouts

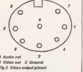


Fig 2. Video output pinout

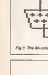
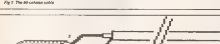
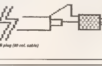




Fig 3 The 80-column cable



Fig 4. The Audio/40-column cable

Heavy on the Magick



CONVERSATIONS WITH APEX

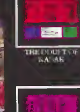


OLD TROLL!

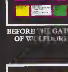




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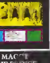


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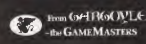
BEFORE THE GATES OF WOLFDORF

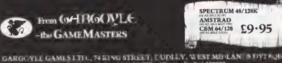
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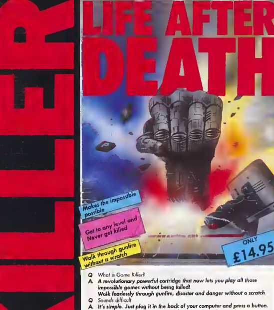
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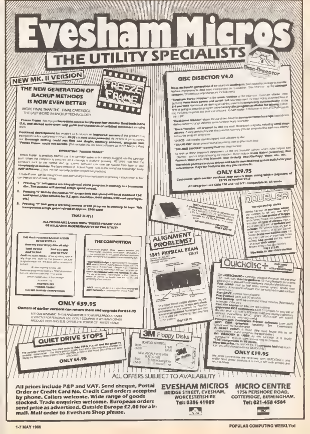
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Wild Bill is flying away from home



TOM COURTNEY TALKS TO MICROPROSE'S KING OF THE SIMULATIONS AND REVIEWS THE LATEST TITLES

The Royal Court in London has seen some dazzling actors in its time But this month the biggest show in town was next door at the Royal Court Hotel where "Wild Bill" Stealey was the main attraction Major Bill had flown in to give us a taste of what was to come from **Microprose** software the uncrowned kings of the flight simulator world

The news is that Microprose are renewing the offensive in the air as well as opening up two new fronts on land and under the sea.

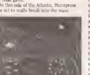
For a company which spends several man years developing its products, there is a positive torrent of programs to be released in 1986 **Silent Service** and **Acrojet** are due in May This should roughly co-incide with the belated launch of two wargames **Crusade in Europe** and **Decision in the Desert** Following close on the heels of that lot are **Solo Flight II** in June and **Gunship** in September Also in the Autumn, a follow up to **Silent Service** is planned, which will show the other side of the coin when you take command of a destroyer attempting to save your convoy from the wolf pack in the Atlantic. The company also has a third string to its wargames bow with **Conflict in Vietnam** but that may be considered strictly for the Yanks, and may never see this side of the Atlantic.

Marketing

Bill Stealey tells you all this in his usual verbal assault mode Being on the other end of this barrage is to feel disorientated and dazed Gradually your senses return. You realise that there are other software houses out there, a possibility Bill hardly admits Reluctantly he concedes that Microprose are only the third to fifth largest software house in the States **Activision** and **Electronic Arts** being the two big names Bill is gunning for

If the latest Billboard charts are anything to go by, in the States at least, it is a fight he's winning. **F 15** is at number 2 after a whole year in the charts and **Silent Service** is number 5, with 17 weeks behind it. "When you talk about market penetration 70 per cent of computer owners have three or more Microprose products over there! We've already got 30,000 advance orders for our 'Nam game."

On this side of the Atlantic, Microprose have yet to really break into the mass



market "US Gold have been doing a great job for us but we feel that with a little more effort we could make a much bigger impact" To this end, Microprose is setting up its own office in this country to try to improve marketing. But there are other problems. The company's games are written on disk, and never designed to work properly on cassette "Our boys just keep working until they've filled the disk up!" This means, in Britain's mainly cassette based market, the games are awkward to play The packaging also suffers Most major high street chains want a single or double cassette case, into which you can only squeeze the most basic manual This compares badly with the American A5 size versions with comprehensive manuals of around 50 pages!

Problems aside Bill believes the combination of strong products and better marketing will do the trick.

Gunship

Microprose are also interested in recruiting some british programmers to try to get more in tune with the British punter "We've already interviewed some big names, either to work here or back in Maryland with our other 15 in-house programmers. **Gunship** was originally due at the beginning of the year but after showing it to several army helicopter pilots, he decided it still needed some more work. 'Helicopter flying is totally different from jets. It's all about tree hopping using the terrain. So we've gone for a full 3D system that'll take your breath away It's all about technology as well, so we've got all the systems in there including TADS (you aim the gun just by looking at the target) Once again it's no shoot-em up, there'll be lots of missions including some lightly armed stealth missions. we even improved slightly on the real thing, we gave the chopper air to air missiles. With the new Soviet attack helicopters its something the air force are considering as well"

Solo Flight II is an updated version of Solo Flight. It features synthesised speech

and a night flying option The speech is used in the instructor pilot option which you can use to take you round your first circuit. This unique option makes it so much easier to get into the game proper, a common criticism of flight simulators – especially from Major Bill himself. "I can't even land Flight Sim II (from Sub logic) and I've got 3000 flying hours behind me!"

For the Amiga, Microprose plan conversions of **Gunship** and **Silent Service**. Obviously these will be better with faster graphics."

Microprose has never produced a "zap" game or an arcade adventure and probably never will "If you want that sort of game, then don't buy one of mine But if you want to test more than your speed of reflexes, if you want 100 hours plus of enjoyable game playing, then Microprose probably have a simulation that's right up your tail pipe ◄

SILENT SERVICE

Run silent, run deep. Submariners with an eye to a pension are not the gung ho type Hours of boredom followed by moments of sheer terror summed up existence aboard a submarine in WW2. Not particularly promising material for a computer game, but Microprose has decided to bite the bullet with this detailed and challenging simulation of life beneath the waves

The most common comment you'll get from anyone watching you play this game is "go on, shoot him" This advice inevitably leads to disaster the successful player in this game has to be prepared to play cat and mouse with his prey Look for an opening, decide when to make your attack, be swift and decisive in your execution. After that don't stand around to watch the fireworks, dive for all you're worth and hope you can avoid the revenge of the escorts.

There are three modes of play: practice, convoy action and campaign Practice just gets you used to handling the controls, firing the gun and the torpedoes. Next, try your hand at one of the six convoy scenarios given. These cover most of the situations you'll come up against, night actions, day actions, shallow/deep water, early/late war The period of the war determines the technology deployed by each side

Once you've polished off a few convoys, it's time to take on a patrol Five scenarios are available this time, covering some of the most famous patrols of the Pacific war The game starts with a map of the south west Pacific; you move your submarine to the point where you consider Japanese ships are likely to be if the screen border turns red, you're on to something. Hit the fire button and the screen changes to the inside of the sub Check the map work out your attack. Then its eyes to the 'scope and see what you've got. If its the odd small cargo ship with a heavy escort, then discretion can be the better part of valour But if there's a tanker or two with only a couple of slow Kaibokan escorts then it's action stations

Control of most functions around the sub is form the joystick using screen icons. It doesn't take long before you're effortlessly flicking between the map, periscope, instruments and damage control.

This game will no doubt leave the zap addicts utterly cold It amply repays close attention to the 50 page booklet that comes with it If you are happy juggling at least half a dozen factors against one another, then you could have what it takes to become an elite sub commander An original idea brilliantly executed ◄

ACROJET

So you think you're a hotshot pilot? You can land Solo Flight in fog over Steamboat Springs with half the instruments out, you can fly Fighter Pilot all day, but are you ready for **Acrojet**? This has to be one of the most demanding plane simulators on the market, and there's not even anyone shooting at you!

The program puts you at the controls of a BD-5J miniature stunt jet, like the one used at the beginning of the James Bond film Octopussy The program offers you ten events to take part in. The object is to complete the given course and stunts as quickly as possible This really makes flying Acrojet a "whole new ball game" as Bill Stealey would put it. Being up against the clock, its no longer just enough to avoid crashing the thing, you've got to fly as close





to the wind as you can, taking as many chances as possible to get a fast time. Although the usual comprehensive manual takes you right through from the basics of aerodynamics and manoeuvres to hints on every event, this is probably not the flight simulator to cut your teeth on However, if all this is a piece of cake, well, start turning up the wind turning down the jet's performance and generally make your life hell

The controls are sensible, and the graphics informative with all the information you need at your fingertips. This game is definitely one for the simulator butts to show off with Right, where did I park my Pitts Special? ◄

Thrills without frills?

CAN DISC SOFTWARE AT £7.99 BE WORTH BUYING? CHRIS JENKINS SAYS YES TO THE LOAD'N'GO SERIES FROM BUG-BYTE

There is a theory that it's the price of software, rather than that of hardware, which restricts the popularity of disk drives in the UK. In the States, where income is high and hardware prices low very few computer users use cassette based software and disks are the standard storage medium. This obviously makes more powerful software feasible, and accounts for the difficulty of converting some US products to the cassette format more usual in the UK.

Now it looks as if for the first time the vicious circle of high disk drive prices and high disk software prices may be broken in the UK. The Load'n'Go series from Green Valley publishing, distributed here by Bug Byte Software, is cheap, easy to use and packaged in such a way that disk software may become an "impulse purchase" in the same way that budget games have.

Simple

This meant a bare minimum of packaging, no manuals (all the instructions should be on the disk in the form of menus and help screens) fast development time and high-quantity marketing. Like the UK's budget games labels, where profits are low per unit, sales must be high, and special outlets and displays were developed at computer specialists and chain stores.

Bug Byte's marketing deal with Green Valley involves, initially, a batch of nine disks and one hardware product. All the disks have several aspects in common vac-formed plastic packaging, no manual, and a price tag of £7.99 What, you might well ask, can you expect for £7.99? Obviously the programs have no frills whatsoever; no graphics, significant sound or remarkable features. What they do have is a refreshingly simple approach and straightforward operation

● **Master Word** is a simple word processor – you might prefer to think of it as a text editor – which includes a number of demo letter files. These cover a number of useful subjects, such as business (nine examples) home affairs (nine examples) and love letters. Appallingly slushy and American, these will at least give you something to laugh about before you turn to the serious stuff!

The program runs through a series of menus, and at each stage you select the option you want – create document, edit document, save, directory, and so on, with a single keypress. At every stage there is a help menu available, which will explain all the options at your disposal and how you control them This aspect is common to all the Load'n'Go programs.

Master Word features insert/delete, tab line insert/delete, cursor control, skip page, skip to end, and so on Print options include double spacing page length, top and bottom margin, and so on Master Word is fine for short letters, though not suited for heavy use since it doesn't allow such things as page headings, mail merge, file rename, and so on Many computer users will go mad over it, though I can hear them now, saying 'This is all I want – why couldn't someone have come up with this before!"

● **Pro Financial Organiser** features three useful utilities Chequebook Balancer is a simple ledger into which you can enter all deposits and withdrawals. Electronic Calendar is a month planner which allows you to place markers on particular days, and project ahead for the rest of the year; and Mail List Manager is a label printer.

For those who require a more powerful database, there's **G-Base**. This allows you to create 600 records per file, editing and adding as you require The disadvantage is that a file may not be larger than the capacity of a single disk.

● **Home and Business Card File** is a contacts lister It allows you to store your data by name, title name of business, business type, address, phone number and any additional comments. You can search by any category, and produce hard copies to form a permanent contacts list.

● **Home Finance Organiser 1** contains a less powerful database, Address Keeper This allows you to store names, addresses and phone numbers only There's another version of the Chequebook Balancer and The Budgeter, a limited financial plotter (It will only cope with figures up to 9999 99) which allows you to keep track of expenses, adding and deleting as appropriate.

● **Electronic Scheduler** is just that – an appointments diary which will sort by name, data, time, person, location, subject and special comments. You can of course update, on a daily, weekly or monthly basis, alter records and view on screen or printer

● **Family Tree,** one of the more original packages, allows you to record information on up to 300 relatives, including birthdates, deaths, relationships, occupation and, according to the blurb "funny habits"! Up to 24 lines of 40 characters each may be stored for each individual and each family tree stored on a separate disk. The program is a little intolerant of incomplete records – you can't mark an individual as being a sister or brother unless they have a parent entered, for instance – but it should be adequate for all but the most exacting genealogists

The most straightforward of the data handling programs is the **Personal Spreadsheet**, which gives 16k of memory and a 15 × 50 workspace You can calculate the sums of columns or rows, perform basic functions at any point, average across rows, or perform a series of up to nine calculations. Unfortunately you cannot store these strings of functions to repeat them later.

The last two products in the Load'n'Go series are programming utilities rather than data handling software The **Commodore 64 Utilities** disk includes directory lister disk format routine, file copy/transfer, file rename, erase and validate, and a master disk directory manager

The final product is a hardware utility suite, the **One Step** cartridge. Similar in many ways to the familiar **Robtek Turbo** or **H&P Final Cartridge**, One-Step has thirty functions including auto line number, file copy free memory, load address, un-new, screen dump, cold start, change disk drive device number, change colours and various load and save functions. There's also the ubiquitous reset switch to allow you to reset programs without wiping the memory One-Step may not have some of the fancy extras of its competitors (machine-code monitors, extra memory space and so on), but it does have the advantage on price at £14 99

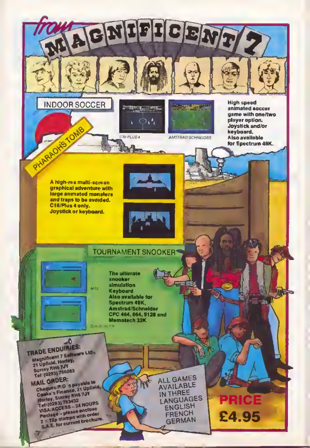
Value

Overall the Load'n'Go series, though unspectacular in comparison to more expensive programs, do the job well and represent excellent value for money With some sensible little touches (such as the facility for making back-ups) and a very straightforward approach the whole cheap disk concept seems ready to take off My only reservation is that the packaging should be more informative; it wouldn't be too much trouble to at least give a full list of the routines on each disk, and with more sophisticated programs such as an icon-driven word processor on the way, it would be a pity if it wasn't made quite clear just what good value for money Load'N'Go represents. ◄

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CBM 64

Jeff Minter's latest '64 game, IRIDIS ALPHA, has emerged from its chrysalis and looks beautiful. It includes yet another innovative game structure and like all of Jeff's work it has to feel right – he writes 'em to play 'em.

The game is made up of two different and challenging sub-games, and features a nicely-animated and distinctly cute droid that can scuttle, jump, take off, even transform itself into a fast fighter craft with suitably loud and deadly laser cannon.

For those who like a little subtlety in with the shooting, this is going to be a blast with class...

£7.[illegible] (tape)

VIC 20

Message to owners: DON'T THROW IT AWAY!

VIVA VIC, a collection of eight LLAMASOFT games for the VIC 20, is now ready.

The contents range through ABDUCTOR and GRIDRUNNER, to METAGALACTIC LLAMAS and the amazingly fast HELLGATE. Many of the games are not available now commercially, and we feel we are doing everyone a favour, including ourselves, by publishing them in this form. The package includes Jeff's historical comments and comprehensive instructions.

GREAT VALUE AT £[illegible] (tape)

COMIN' SHORTLY

CBM 16

We have now had MATRIX the enhanced and expanded successor to the famous GRIDRUNNER, re-written for the '16. It includes all the features of the original version, including that treacherous humanoid, 'the SNITCH', and the hallucinatory camels. C16 MATRIX features an even faster fire-rate than the original. Strategic decisions and rapid reactions become more and more essential as the game progresses...

A similar conversion of LASERZONE, the hectic and challenging game which was such a notable success on the Vic 20 and the '64, will also appear shortly. It features a unique and ingenious method of joystick control. As you learn the skills of laser fire, things get tougher and tougher for those pesky aliens! Great sonix too.

"...and yonder, still before us, lies... the AMIGA..."

LLAMASOFT

LLAMASOFT 49 MOUNT PLEASANT, TADLEY, HANTS (TEL [illegible]) SAE FOR CATALOGUE & NEWSLETTER

TOOLBOX

by Paul Murray

Two more new commands for your Spectrum Toolbox this week – an On Error command and a Block Delete facility – all in glorious machine code

Error is a run-time facility and should be the first line in any program in which error trapping is required, together with the value of the line number to which control is to be transferred if an error is detected

There are two entry points to *Error Randomize Usr 64163* is equivalent to 'On Error Gosub', as a *Return* can be made to the statement subsequent to that at which the error occurred

Randomize Usr 64167 is equivalent to *On Error Goto* as no record of the point at which the error occurred is kept. The line number to which control is transferred is entered in Basic, using the variable *LIN* Thus

10 *Let LIN= 1000 Randomize Usr 64163* is equivalent to **10** *On Error Gosub 1000* whilst **10** *Let LIN= 1000 Randomize Usr 64167* is equivalent to **10** *On Error Goto 1000*

In order to permit different courses of action to be taken for different errors a record is kept of the code of the error which occurred. This may be obtained by *Peeking* to 64283 which is the memory location at which the code is stored. The error codes are as shown below

1 NEXT without FOR
2 Variable not found
3 Subscript wrong
4 Out of memory
5 Out of screen
6 Number too big
7 RETURN without GOSUB
8 End of file
10 Invalid argument
11 Integer out of range
12 Nonsense in Basic
13 Break-CONT repeats
14 Out of DATA
15 Invalid file name
16 No room on line
17 STOP in Input
18 FOR without NEXT
19 Invalid I/O device
20 Invalid colour
21 Break into program
22. Ramtop no good
23 Statement lost
24 Invalid stream
25 FN without DEF
26 Parameter error
27 Tape loading error

Note that error codes 0 (OK) and 9 (STOP statement) are missing. This is because the program does not treat these as being errors and allows them through

Delete deletes a block of lines between specified limits. The limits of deletion are entered in Basic using
FL = First Line Lower limit of deletion
LL Last Line Upper limit of deletion

For example if
Let FL=40 Let LL=120 Randomize Usr 64493 is entered then all lines in the range 40 to 120 inclusive will be deleted

Don't forget, to install the routines you'll have to use the Basic loader program printed in the April 10 issue. However, for the faint hearted, cassette copies of the whole suite of programs can be obtained from Paul Murray for the sum of £3. Write to 5 Hanham Mills, Bristol B15 3NU

Name	Start Address	Parameters
Error	64163/64167 (Gosub/Goto)	LIN = Line to branch to on error (Error code picked up at 64283)
Delete	64493	FL = First line LL = Last line

```
64010  62   2    208  1    22
64015  221  33   248  249  175
64020  17   17   0    55   221
64025  229  205  86   5    221
64030  225  48   238  221  229
64035  221  126  0    17   192
64040  9    205  10   12   6
64045  10   33   249  249  126
64050  229  197  218  193  225
64055  35   16   247  62   13
64060  215  24   27   128  83
64065  84   65   82   84   73
64070  78   71   32   65   84
64075  186  76   69   78   71
64080  84   72   186  78   79
64085  32   76   73   78   197
64090  17   63   250  175  205
64095  10   12   221  225  221
64100  78   13   221  70   14
64105  221  229  221  126  0
64110  167  32   15   120  234
64115  128  32   10   62   2
64120  17   63   250  205  10
64125  12   24   6    205  43
64130  45   205  227  45   62
64135  13   215  17   63   250
64140  62   1    205  10   12
64145  221  225  221  78   11
64150  221  70   12   205  43
64155  45   205  227  45   62
64160  13   215  201  62   1

CHECKSUM=14824
```

```
64493  24   84   33   79   252
64498  34   93   92   205  178
64503  40   48   2    207  1
64508  35   17   146  92   1
64513  5    0    237  176  231
64518  205  178  40   56   239
64523  17   151  92   1    5
64528  0    35   237  176  239
64533  225  224  36   205  162
64538  45   76   105  205  110
64543  25   34   233  251  205
64548  162  45   76   105  205
64553  110  25   40   1    235
64558  237  91   75   92   229
64563  167  237  82   225  200
64568  35   35   94   35   86
64573  35   25   34   235  251
64578  201  205  239  251  237
64583  91   235  251  205  229
64588  25   207  255  70   76
64593  58   76   76   58   43

CHECKSUM=12774
```



SUBMARINE

by Daniel Bishop

Be wary on from last week beware of being too close to the sub. It may try to defend itself by firing torpedoes at you. If you are unlucky this may result in the destruction of your ship. Otherwise, the torpedo trails can give you a valuable clue, since they emanate from the location of the sub.

Another clue which you may be lucky enough to spot is the periscope. When the sub is just below the surface it may up-periscope. However, the wake caused by the periscope being out of the water is not very noticeable so you need to have sharp eyes to spot it.

As well as moving about as your ship may do, it may help you to know that the submarine alternately rises to the surface and then dives to the sea bed. The sub only fires torpedoes when it is just below the surface. But it may then dive very quickly to avoid your depth charges if its torpedoes fail to destroy your ship!

Your mission is, of course, to destroy the submarine. When you think you are close enough to the sub fire a depth charge by pressing the fire button or by pressing the spacebar. If your charge is successful you will hear the sub blowing. Otherwise you are free to fire another, if you can spare it!

Note that you will have to be almost upon the submarine to be sure of getting it. Also the deeper the sub the less effective are your depth charges.

The submarine may also ram your ship in a desperate bid to destroy you. This is, however, a rare occurence, unless you continually cruise just above the sub!

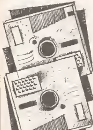
To receive your briefing, press B at any time during the game. You will be given precise orders from the Admiral, plus information on which keys to use to control your ship.

When the game ends you may lose or gain points depending on the outcome.

Program Notes

Line No	Remarks
10-70	Once only initialisation. Note the circumflexes in line 180. They occur elsewhere in the program as well. Use the up-arrow key (next to CLR) on the Amstrad keyboard
80-250	Screen display routine
260-310	Every game initialisation
320-390	Program core
400-460	Act upon various possible occurences. Note that the Amstrad's AFTER interrupt facility is used in this program to control the sonar
470-580	Get user's input and act upon it
590-790	Various calculations mostly involving ship and sub movement
800-850	Briefing subroutine
860-910	Update display subroutine
920-970	Speed modifying subroutine
980-1030	Helm modifying subroutine
1040-1100	Depth charge firing subroutine
1110-1200	Explosion effects subroutine
1210-1310	'Blip' sound effect subroutine
1320-1340	Sets sonar flag to on
1350-1380	Clear display subroutine
1390-1470	Torpedo fired subroutine
1480-1620	End of game subroutine
1630-1680	Teleprint subroutine. This prints TP$ like a printer would, fairly slowly with that staccato sound effect we know so well!

```
[illegible]
```



DISC MONITOR

by D Baker

The Disc Monitor program is in two parts, the first being composed mainly of program messages and counters etc whilst the second is the run code itself

Save each part as a Basic listing (as a precaution) prior to loading and running Part One (printed this week) If the checksum doesn t flag an error *Load* and *Run* Part Two (printed next week) – this takes approx 20 seconds to run If all is still OK the program can be saved as a block of code from 49152 to 51976 ($C000 – $CB08) via a monitor or similar The program is started via a *SYS 51484* ($C91C) command

Assuming you have successfully loaded and started the program you will see the current Disc Status and Menu in the bottom part of the screen The Disc Status will update regularly during program execution informing you of any errors

Commands are entered via the Function keys and are as follows

(F1) Load – You are prompted for *Track* then *Sector*, enter the required values in decimal pressing *Return* as each is entered The requested block will load into 1541 Ram and C64 Ram The first page of the block will be displayed (The display and paging are described later)

(F2) Chain Load – If you wish to step through a program or file block by block and don't want to keep entering the values for the next Track/Sector you can load the next block via F2 If you reach the last block and try to chain again an end of program message is displayed

(F3) Page – As described later only half a block is displayed at a time This key 'toggles' between the two halves to display the other half

(F4) Save Block – This saves a displayed block to the Track and Sector it was loaded from. (Can be used to transfer disc to disc, if you know your way around the Ram etc!)

(F5) Printout – This dumps a whole block to the printer giving Hex and ASCII as per the normal display format.

(F6) Backup – This is a no frills six pass disc copier that produces a 100% copy of the original It does not reproduce commercial protection devices, read errors, etc and is only designed to copy unprotected software prompts tell you when to swap discs To abort a copy, press (A) when the "Insert Source Disc" message is displayed

```
10 REM DISK MONITOR PART ONE
20 PRINT CHR$(147)
30 NR=0
40 FOR X=49100 TO 49402
50 READ A
60 POKE X,A NR=NR+A
70 NEXT X
80 IF NR<>18813THENPRINT"DATA ERROR-NR=";NR
90 STOP
100 DATA  21, 21, 21, 19, 18, 17,  1,  7, 13, 18, 25, 31, 36, 35
110 DATA  85, 43, 58, 32, 56, 32, 48, 32, 49, 56, 32, 32, 49, 66
120 DATA  45, 80, 32, 56, 32, 48, 84, 82, 65, 67, 75, 32, 61, 32
130 DATA  64, 83, 69, 67, 84, 79, 82, 61, 32, 64, 91, 70, 49, 93
140 DATA  45, 76, 79, 65, 68, 32, 91, 70, 50, 93, 45, 67, 72, 65
150 DATA  73, 78, 32, 91, 70, 51, 93, 45, 80, 65, 71, 69, 32, 36
160 DATA  48, 48, 47, 36, 56, 48, 64, 91, 70, 52, 93, 45, 83, 65
170 DATA  86, 69, 32, 91, 70, 53, 93, 45, 80, 82, 73, 78, 84, 79
180 DATA  85, 84, 32, 91, 70, 54, 93, 45, 67, 79, 80, 89, 64, 91
190 DATA  70, 55, 93, 45, 81, 35, 73, 64, 32, 60, 69, 68, 73, 84
200 DATA  32, 66, 89, 32, 79, 86, 69, 82, 84, 89, 80, 73, 78, 71
210 DATA  62, 42, 73, 78, 83, 69, 82, 84, 32, 83, 79, 85, 82, 67
220 DATA  69, 32, 68, 73, 83, 75, 64, 73, 78, 83, 69, 82, 84, 32
230 DATA  32, 67, 79, 80, 89, 32, 32, 68, 73, 83, 75, 64, 66, 65
240 DATA  67, 75, 85, 80, 32, 67, 79, 77, 80, 76, 69, 84, 69, 32
250 DATA  32, 32, 64, 84, 72, 69, 78, 32, 80, 82, 69, 83, 83, 32
260 DATA  65, 78, 89, 32, 75, 69, 89, 64,  1, 18, 25, 31, 21, 19
270 DATA  18, 17, 84, 82, 65, 67, 75, 32, 76, 73, 77, 73, 84, 32
280 DATA  40, 49, 32, 45, 32, 51, 53, 33, 64, 83, 69, 67, 84, 79
290 DATA  82, 32, 78, 82, 32, 84, 79, 79, 32, 72, 73, 71, 72, 33
300 DATA  64,  0, 21, 69, 78, 68, 32, 79, 70, 32, 80, 82, 79, 71
310 DATA  82, 65, 77, 47, 70, 73, 76, 69, 64
```


PRINT OUT

by Barry Ashfield

The excellent Brother EP44 typewriter printer has proved remarkably versatile for use with QL. Not only is it a quality printer for use with program listings or the *Quill* package but it can also be used as a portable typewriter. Letters or programs can be typed into the EP44 on the train or in the bath if you like and can be transferred to the QL at your leisure.

Basic programs can be stored indefinitely in the printers memory to be run by the QL when required. In fact for short Basic programs it is often faster and more convenient to load them from the printer rather than the microdrives. The printer will also act as an RS-232C terminal with 2 way communication between printer and computer.

Firstly, let's deal with connecting the two together. The Sinclair RS232 lead works fine with the EP44, but it is possible to make your own lead up if you can get hold of the special modulator. The connections are

QL ser1		25 pin "D" plug	
1	GND	SG	7
2	TXD	SD	2
3	RXD	RD	3
4	DTR	ER	20
5	CTS	S	5

Now set up the EP44 by switching the mode switch to *Terminal*. The display will now read *Off Line*. Press the */Mode* key and the *Baud Rate* will be displayed. Use the *Return* key until *Baud Rate 1200* is displayed. Pressing */Mode* again will accept this setting and invite you to set *Bit Length* next. Continue using the */Mode* and *Return* keys until all the settings are the same as List 1. Press the *Cont* key and you are ready to print. Turning off the printer does not affect these settings so you only have to do this once.

For direct printing from the QL to the printer type in *Baud 1200 Open#10 ser1c* and press *Enter*. Anything you now *Print* to #10 will now be printed on the EP44. If you wish to print a '£' sign use *Print#10, Chr$(156)* or use *Ctrl+Shift+ ,* to give the Beta symbol which is printed by the the EP44 as a £.

To print a program listing just type in *List#10* and the program will be listed on the printer. You must *Close#10* before switching off the printer or the QL will lock up. If this happens just turn the EP44 on again and Close#10.

The only problem with using the EP44 with *Quill* is printing the '£' sign correctly and using the underline facility.

To set up to give normal printing of all characters, set up the EP44 as in List 1 and then *Lrun* the *Install Bas* program on the *Quill* cartridge. Keep the *Quill* cartridge in Drive 1 and enter the parameters in List 2. Some difficulty may be encountered on setting up the *Translate1* which ensures correct printing of the '£' sign and the following procedure should be used:

1) use cursor keys to move up/down to *Translate1*
2) use cursor left or right to give change item mode
3) Type 96 156 and press enter
4) If all is correct *Translate1* should appear as in List 2

Repeat the procedure for *Translate2* and *3* which print the zero and copyright symbols. When all is correct press F5 to install the printer driver and you can reset the QL and run *Quill*. Note that the superscript and subscript modes will be ignored with these settings.

Text can be sent very easily from the printer to the QL. Use the same settings on the EP44 as and on the QL just type in *Baud 1200 Copy ser1c To scr*. Press *Enter* and with the EP44 in terminal mode you can type directly on the QL's screen. If you have any text stored in the printer's memory, press the key marked + */text* and it will be sent to the screen also. To end transfer press *Code+Z* on the EP44. Of course you can't do anything much with this except print on the screen.

If you have an editor (such as the one

LIST 1 BROTHER EP44	
BAUD	1200
BIT LENGTH	8
PARITY	N
NEWLINE	CR
CODE	8BIT
ER	Y

LIST 2: QUILL, INSTALL BAS	
DRIVER NAME	EP44
PORT	ser1
BAUD RATE	1200
PARITY	NONE
LINES/PAGE	0
CHARACTERS/LINE	80
CONTINUOUS FORMS	YES
END OF LINE CODE	CR
PREAMBLE CODE	NONE
POSTAMBLE CODE	NONE
BOLD ON	NONE
BOLD OFF	NONE
UNDERLINE ON	DEF
UNDERLINE OFF	DEF
SUBSCRIPT ON	NONE
SUBSCRIPT OFF	NONE
SUPERSCRIPT ON	NONE
SUPERSCRIPT OFF	NONE
TRANSLATE1	£ p (type 96 156)
TRANSLATE2	@ (type 127, 64)
TRANSLATE3	0,0,96 / (type 48 48 8 47)
TRANSLATE4	NONE
TRANSLATE5	NONE
TRANSLATE6	NONE
TRANSLATE7	NONE
TRANSLATE8	NONE
TRANSLATE9	NONE
TRANSLATE10	NONE

BASIC program A

```
100 REMark transfer EP44 textfile to form
110 REMark suitable for import to Quill
120 BAUD 1200
130 OPEN#10,ser1c
140 OPEN_NEW#20,mdv1_ep44_exp
150 CLS#0: PRINT#0,"CODE-ESC ( EP44 ) to
    end transfer"
160 REPeat in_loop
170 a$=INKEY$(#10,-1)
180 IF CODE (a$)-27 THEN EXIT in_loop
190 IF CODE(a$)-156 THEN
200 PRINT "£";:PRINT#20,"£";
210 ELSE PRINT a$, PRINT#20,a$;
220 END IF
230 END REPeat in_loop
240 CLOSE#20:CLOSE#10
```

supplied with the *Adder Editor/Assembler* text can be sent from the printer's memory to the editor by just giving *ser1c* as a filename and pressing + */text* When the *Text End* message appears on the printer again, press *Code+Z* to send the EOF marker and end transmission The *Baud* rate must be set to suit the printer (usually 1200) before attempting any transfer of text

Text can also be sent from the printer to a Microdrive file and then imported into Quill In fact this article is mostly written on the EP44 in *Store Text* mode and then later transferred to Quill for final editing and printing The file to be imported *must* have the extension – *exp* or *Quill* will not import it

Set up the printer as in List 1 and place a suitable cartridge in Drive-1 then
1) Load the Basic program _ A but don t run it yet
2) Have text ready in printer s memory
3) Put EP44 in Terminal mode and press *cont* and + */text.*
4) Run the Basic program and the text will be sent to *mdv1_ ep44_ exp*
5) When the *Text End* message appears press *Code+ Esc* to close the file Do not use *Code+ Z* as this will stop with an EOF error and leave the file open Running the program after you have sent the text ensures that the unwanted control characters are not sent
6) Now load up *Quill* and place the cartridge with the export file in drive 2
7) Select the Files command and then the Import option and enter the full filename *mdv2_ ep44_ exp* and the text is imported to *Quill* and can be edited as required and saved as a normal document.

As far as Basic programs go If the text stored in the printer is in the form used by a Basic program (with line numbers) it can be loaded and Run quite simply with *Baud 1200 1run ser1c* and press + */text* to send the Basic program

Code+Z ends the transmission and runs the program If you have made any errors they will be flagged by the QL and the program will stop at that line This is faster than the microdrives for short programs so it is possible to store often used programs of up to 3728 bytes in the printer for instant recall

Finally to use the EP44 as a terminal first set up the printer as in list 1 and then *1run* Basic program – B Anything typed on the QL will be printed on the printer and characters typed on the printer will be printed on the QL s screen The program takes care of the £ sign to ensure normal printing *Code+ Esc* on the printer ends the program

BASIC program B

```
100 REMark QL to EP44 2 way terminal
110 CLS#0 PRINT#0,"CODE+ESC ( EP44 ) to Quit terminal"
120 BAUD 1200 OPEN#10,ser1c
130 REPeat main_loop
140 REPeat in_loop
150 a$=INKEY$ IF a$<>"" THEN EXIT in_loop
160 a$=INKEY$(#10) IF a$="" THEN NEXT in_loop
170 IF CODE(a$)=27 THEN EXIT main_loop
180 IF CODE(a$)=156 THEN PRINT '£', ELSE PRINT a$,
190 END REPeat in_loop
200 REPeat out_loop
210 IF a$='£'THEN PRINT#10,CHR$(156), ELSE PRINT#10,a$,
220 PRINT a$,
230 a$=INKEY$ IF a$="" THEN EXIT out_loop
240 END REPeat out_loop
250 END REPeat main_loop
260 CLOSE#10
```

Anyshape on Amstrad

by Jon Tarrant

This programme is a simple demonstration of the graphics power of DR LOGO (as supplied with the Amstrad disc systems). It defines a routine called *anyshape* which can draw any regular two dimensional figure.

When the routine is run it requests an input for the number of corners (sides) the shape is to have. Numbers between three and ten are most suitable, numbers greater than about 20 give essentially circular figures and are therefore of little interest.

All the shapes are drawn the same size by scaling the length of individual sides to fit the shape within a circle of radius 120 graphic units.

Incidentially, it is probably easiest to type-in the program using the CP/M editor ED.COM (ensuring that the filename is ANYSHAPE.LOG).

It is then possible, of course, to enter, *load "anyshape* once Logo has been installed. This defines the routine which can then be run by typing in the word *anyshape*.

```
to anyshape

make "radius 120

cs ct
pu setpos[0 30] pd

pr[ENTER NUMBER OF APEXES OF OBJECT]
make "apexes rq

make "angle 360/:apexes
make "side (2*:radius)*cos(((:apexes-2)*180)/
(2*:apexes))

pu fd :radius pd
rt (90+(0.5*:angle))

repeat :apexes [fd :side rt :angle]

lt (90+(0.5*:angle))
pu bk :radius pd
```

80 Column view on BBC B

by Andrew Homer

There you are sitting at the keyboard writing away to your heart's content using Wordwise (40 column mode) and then it hits you. I wish I could preview section of my text in 80 column mode ... have *you* ever wished you could preview sections of large *Wordwise* files in 80 column mode instead of 40 column mode?

Well, if you have, help is at hand for disc users, with this short segment program.

All you do is position the cursor under the last line of text you want to preview, check that F0 is set to 'Insert', and run the program.

The text will be displayed in 80 column mode regardless of the size of the main file. It will also be displayed in conveniently sized pages which can be scrolled by pressing the spacebar. An additional advantage is that a backup copy of the whole text is stored in 'FL' each time the program is used.

The total number of lines previewed is set by L% and the amount of text displayed between pauses is set by S%. These can be varied to suit requirements.

In order to use this utility you must have sufficient space for two extra files on any disc used with the program. If the main text is lost, it can always be recovered by loading 'FL'.

The program has been developedon a BBC B, but there is no reason why it shouldn't be OK for a BBC B+ or a Master – and all existing versions of Wordwise.

```
L%=132
S%=20
CLS
SAVE TEXT"FL"
CURSOR AT 39
TYPE CHR$(13)
FKEY3
CURSOR UP L%
CURSOR AT 0
FKEY3
CURSOR TOP
.DELETE
FIND"|GLM"
IF EOT THEN GOTO SPOOL
DELETE WORD
GOTO DELETE
.SPOOL
DEFAULTS
SPOOL MARKED"SP"
LOAD TEXT"SP"
*DELETE SP
CURSOR TOP
TYPE"|GLL180|W"
.PAUSE
CURSOR AT 39
CURSOR DOWN S%
IF EOT THEN GOTO VIEW
CURSOR AT 0
TYPE"|GPA|W"
GOTO PAUSE
.VIEW
TYPE"|GPA|GPA|W"
DEFAULTS
PREVIEW TEXT
LOAD TEXT"FL"
CURSOR BOTTOM
DISPLAY
*FX21,0
END
```

Disc drive advantage

Michael J King, of Newlands Road Bentley Heath, Solihull writes

Q **I am intending to buy a disc drive for my Commodore 64 and I understand its advantages over tapes for loading adventures and such in parts. What I am uncertain about is whether there is any advantage with games like *Elite*, and *Way of the Exploding Fist*. I realise that they will load quicker from disc, but is this the only advantage?**

A For games this probably is the only advantage and, although they may load a little faster, there is not much difference between a disc drive and one of the fast tape loaders apart from reliability and being able to save your status quickly

If, however, you want to do any programming on your 64 or use it for word processing and other business applications then the advantages of using discs become far more obvious

Drastic measure

Mike Williams, of Craigmont Drive Edinburgh writes

Q **On reading Mark Groom's letter about his Amstrad CPC64 tape problem, I thought my solution might help. I purchased my 464 when they first appeared and programs stopped loading about two months ago. The output was sounding wobbly – 'flutter' to hi-fi freaks. After a little poking around inside the machine, I decided that the drive belt was tired. As a temporary measure, I cut about 8mm out of it, and super-glued the ends back together.**

Although I don't use the cassette much now that I have disc drives, I don't see why this solution shouldn't work in Mark's case as I now have no problems, even with flash loaders

A Before trying this rather drastic measure it always helps to try cleaning the tape transport system. The main part that causes flutter is the capstan (the little rubber wheel and vertical spike) which pulls the tape through at a constant speed. Use a cotton bud dipped in some solvent (methylated spirits are best) to scrub the capstan and spike to remove any accumulated grime and then make sure any excess cleaning fluid is removed

While you're at it, it is also wise to clean the record and play heads in the same way. When you try the tape again, it should be much improved

If you do try Mike's solution, make sure your Amstrad is out of its guarantee, otherwise you will almost certainly invalidate it

Which computer?

R Cassidy of Stirling, writes

Q **I am contemplating the purchase of a computer and seek advice. My requirements are fairly straightforward: I require a computer which can play a range of games, for both my young family and myself to learn about computers through 'fun'**

The Amstrad CPC6128 or the Commodore 128? Would you recommend either of these, or do you see any other machines suited to my needs?

A Both the 6128 and the Commodore 128 would be suitable. While the Commodore's range of games software is arguably the best there is, games are being written and converted to the Amstrad all the time

One consideration in your choice may well be price – a 6128 with a colour monitor costs £369, and you get a built-in disc drive as well as the monitor and CPU in the price. The counter to this is that disc-based Amstrad software is still not as readily available as tape versions. The C128 costs £269, but no monitor or disc drive is included in the price

The machine with the widest range of entertainment software is the Spectrum, but the Spectrum will almost certainly not be available in its current form for much longer following Amstrad's takeover of the product

Spectrum repairs

Rafferty Raf of Casson St, Whitechapel, London writes

Q **My Spectrum broke down several months ago and I have had to send it to a couple of repair shops. It was returned unrepaired. I then took it to a repair shop who said that it would cost about £35 to fix. Since a new Spectrum is about £60, I declined. They also said that the chips, including the CPU, would need to be replaced**

I have tried to get in touch with Sinclair several times but the phone has never been answered. To top it all, my friend's Spectrum Plus, which I use, has also broken down

I would also like to know if there are any other computers around at about £100 that have good quality sound and graphics. I would use it mostly to play games

A I don't know what you've done to the poor machine but it sounds a little drastic. It is rather unlikely that all the chips have broken down although Spectrums have been known to crack-up completely for various reasons. The quoted cost of fixing seems a little high – there are many companies in our classified section quoting repairs for less than £20

Getting in touch with Sinclair is now rather a waste of time since the Amstrad takeover and the best thing to do would be to contact the new owners. Unfortunately Amstrad is still trying to sort out its Sinclair affairs, which should take around six weeks and it recommends that faulty machines should be returned to the retailers

Amstrad is however currently talking to firms about repairing Sinclair micros so the best thing to do is read the news pages, and wait for developments

Probably the best computer bargain for playing games on is the good old Commodore 64. Even considering that it is now a bit over the hill there is still an awful lot of games software available for it

Strings on the 64

Martin Lanni, of Valley Drive Kendal, writes

Q **I own a Commodore 64, and am trying to write a program which accesses a file containing several strings and prints them up on screen. However, I am experiencing trouble as I keep receiving a "String too long error". I am using cassette**

A Imagine you want to keep a list of five items in two parts, perhaps a name and a number (as in a phone directory, or a stock list). The best way to handle this is to set up a two-dimensional array. Call the array LS$() in which case LS$(n 1) holds the name and LS$(n 2) holds the number

The program listed below demonstrates an example of this technique. If you run it, you'll be asked to enter five names and numbers. Following this you'll be prompted to put a tape in your recorder. The program then writes the content of the array to the file

After this rewind the tape and the file will be read back into a checking array called CH$()

The use of C$ as a delimiter is the key to avoiding the "String too long error". And to identify strings in an array, simply loop through comparing the array content with a target string until a match is found

```
10 DIM LS$(5,2):CH$(5,2):C$=CHR$(13)
20 FOR I = 1 TO 5
30 INPUT"NAME";LS$(I,1)
40 INPUT "NUMBER";LS$(I,2)
50 NEXT
60 REM *** SAVE TO TAPE ***
70 PRINT"POSITION TAPE IN RECORDER"
80 PRINT"PRESS A KEY TO PROCEED"
90 GETA$:IFA$="" THEN90
100 OPEN1,1,1,"TEST FILE"
110 FORI=1TO5
120 PRINT#1,LS$(I,1) C$;LS$(I,2) C$
130 NEXT
140 CLOSE1
150 REM *** READ FROM TAPE ***
160 PRINT"POSITION TAPE IN RECORDER"
170 PRINT"PRESS A KEY TO PROCEED"
180 GETA$:IFA$=""THEN180
190 OPEN1,1,0,"TEST FILE"
200 FORI=1TO5
210 INPUT#1,CH$(I,1),CH$(I,2)
220 NEXT
230 CLOSE1
240 REM *** CHECK FILES ***
250 PRINTCHR$(147);"LS$()"
260 FORI=1TO5
270 PRINTLS$(I,1),LS$(I,2)
280 NEXT
290 PRINT:PRINT"CH$()"
300 FORI=1TO5
310 PRINTCH$(I,1),CH$(I,2)
320 NEXT
```



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Setting up on one's own

David Wallin sifts through his mailbag and answers your Bulletin Board queries

Firstly this week, an apology In a recent article about the history of Viewdata I omitted to mention the main source of the information it was, of course the *Spectrum Micronet Book*, by Alan Giles published by Melbourne House Sorry for leaving you out!

One topic which many letters come to me about is the Protek 1200 modem It s attracting a lot of attention largely because it's only £15 which includes Prestel and User-to-User communications software and leads for either the Spectrum BBC or Commodore The modem works at 1200/1200 and 1200/75 however It s only an acoustic device so you plug the phone into suction caps but at £15 you can't expect that many features

Protek Computing which made the modem has gone bust and its products are being sold off by Future Software at 4 Rowanburn, Canonbie Dumfries, Scotland

If you want a very cheap introduction to communicating then in my opinion this is a good way to start

Next I ve been told of two new Bulletin Boards by their sysops this week they are Swindon ITeC and Techno Fresh Systems Swindon is an information technology exchange centre Bulletin Board, of which there are a large number in this country It runs using the CommunITel package which means it is a Prestel compatible board and to access it you need to have Viewdata software Therefore it's 1200/75 baud The hours for this board are 1530-0900 Monday to Friday and 24 hours at the weekends The number is Swindon (0793) 610200

In the letter the sysop said that to find out what s on it you ll have to call and find out for yourself; all he said was it has something for everyone so I guess you'll have to give it a go

On-line adventures

The other board Techno Fresh Systems is run by Llew Dickinson in Wales It s only 300/300 baud but Llew hopes to get 1200/75 on-line soon as well One interesting feature of this board is that it runs competitions for users with software and books as prizes

As with many boards there is loads of free telesoftware to download and mess about with Most of this was uploaded by users of the board in the past month when the board was set up There are lots of different sections as usual and there is also an OXO game – a user versus Llew game of noughts and crosses Llew also hopes to have some on-line adventures running soon as well Lastly the times and number 24 hours and 0570-423082

I have received a letter from a person who goes by the name of ZandoR about MUGs A MUG is a Multi User Game *MUD* is probably the best known example

Demo account

According to ZandoR alias Colin Curless the MUG called *Gods* is 'really fantastic Well, he would say that wouldn t he It is run by Lap of the Gods Ltd the personae of the people who run the MUG are Tiger Tiger Major Malfunction and Lucy (which at least sounds vaguely normal) *Gods* costs £23 to register with which is in fact cheap as MUGs go It runs alongside a Bulletin Board run by Tiger Tiger, on 01-994 9119 8 bits, no parity

When you dial this you get the option of either using the BB which is free, or going to *Gods* for which you need to have registered.

There may be a demo account which you can use to see if you want to pay for full access but ZandoR wasn t sure of this Why not give it a try? If you want to contact Lap of the Gods Ltd for more information the address is Gods Lap of the Gods Ltd, 166 Portobello Road, London W11

Another letter about starting a BB comes from B R Cossins who has a tip for BB users when dialling a board If it rings more than three times you may as well hang up All boards should answer in less than three rings so if you stay on the phone you will be likely to get a vocal answer and probably a wrong number at that Mr/Ms Cossins also wanted help starting a BB especially with regard to the best micro on which to run one I would go for a BBC partly because there is cheap software readily available for running a BB and also because setting up a BB on the BBC with your own software, is dead easy More on that in a few weeks

The next part of the letter was about disc size 100K will do but a 100K BB will, to put it politely be pathetic! A good board needs a minimum of 400K but 800K is probably best to start off with Most bulletin boards on-line have at least 800K, if they don t it shows, because they lack many features such as Sigs messaging and telesoftware, all of which use a great deal of disc memory The Micrognome, for example uses just over three megabytes of disc space which is 3 000K Other boards run with Winchesters which store from 5Ms to 20Ms For a really good board at least 1M would be used

Also there is the question of Ram discs users of the Amstrad PCW range of micros will know about these A Ram disc consists of Ram chips 32K 64 112K or whatever set in separate disc drive format On the PCWs this appears as drive M The advantage of a Ram disc, over a floppy or even a Winchester is that the time taken to access data is incredibly fast because there are no motors to start and stop

With a Ram disc things like the user log could be stored on one and access would be almost instant Anyone who uses Bulletin Boards on a regular basis will know how long it takes to check the user log to find out who you are, one or two units of phone cost, which is five or ten pence a time It all adds up

Save money

Lastly this week phone bills Llew Dickinson pointed out that it is really frustrating if people do just turn off J W Hughes pointed out that this doesn t even save you money It is a bit complicated but I'll try to explain.

Let s say that at the time you re on-line you have five minutes to a phone unit If you are on line for just one second, it costs one unit (5 75p plus VAT) the same as if you are on line for four minutes 59 seconds You are charged when you enter a band of time not at the end of it

So if you just break the line you are wasting money that you have already spent not saving it So don t just hang up it's a waste of money and rude Thanks to Mr Hughes for pointing this out.

If you have any queries, tips or comments to make about any aspect of micro communications, David Wallin would love to hear from you

Write to him at *Popular Computing Weekly* 12-13 Little Newport Street London WC2H 7PP

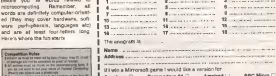
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And now the moment you've all been waiting for – your chance to grab a share of £2,000-worth of great hardware and software. Over the last three weeks we've presented you with three wordsearch grids, each containing six words, so by now you should have before you 18 words related to microcomputing. Remember, all words are definitely computer-oriented (they may cover hardware, software perhipherals, languages etc) and are at least four-letters long. Here's where the fun starts.

The initial letters of these 18 words form an anagram of a common computing phrase containing three words. To make it a little easier, the word grids were given in order, so the six words from the first grid provide the first six letters of the phrase, etc.

To enter, fill in the form giving all 18 words, and the resulting anagram, and send it to the address below. Closing date for entries is Friday May 23.

Prizes will go to the first all-correct entries out of the hat.



Competition Rules

1 All entries must be received by 5pm, Friday May 23. Proof of postage will not be accepted as proof of receipt.
2 All entries must be made on the accompanying form. If you do not want to cut your issue of *Popular Computing Weekly* you should use a photocopy.
3 The prizes will be awarded to the senders of the first 20 all-correct entries.
4 In the event of any dispute the editor's decision is final and no correspondence will be entered into.
5 Winners will be notified by post. A list of all prize-winners will also be published in *Popular Computing Weekly* issue dated May 30-June 5.

Entry Form

The 18 words are:

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10 .... 11 .... 12 ....
13 .... 14 .... 15 ....
16 .... 17 .... 18 ....

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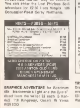
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New Releases

Graham Taylor looks through this week's new srrivals

AMSTRAD

Program *Redhawk* **Type** Adventure **Machine** Amstrad **Price** £8 95 **Supplier** Melbourne House 60 high Street Hampton Wick Kingston upon Thames, Surrey KT1 4DE



Program *Equinox* **Type** Arcade **Machine** Amstrad **Price** £9 95 **Supplier** Mikro-Gen Unit 15 The Western Centre Western Road Bracknell, Berks RG12 1RW

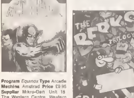
Equinox is one of those games that has little by way of originality but is so well programmed and neatly presented that one feels well disposed towards it Although *Equinox* reminds me of half a dozen arcade games I ve already seen a couple by Bubble Bus, for esample It looks spectacularly colourful on the Amstrad and the neatness of the aprite design makes for a very appealing game

Plotwise – well it s that find the eight radioactive canisters and destroy them, use your teleporters smart bombs dynamite and other wacky objects ' time again The screens are chock full of bouncing aliens and you have only a rather pitiful laser with which to blast your way through to the next level The cannisters lurk somewhere on each level and must be disabled by chucking them through the disposal chute, you need to teleport to the next level and for that you need a pass card

The graphics are excellent here and there there are some enormously large detailed objects like one-eyed monsters which match anything previously seen on the Amstrad for beauty of design If your appetite for collect and blast games is inexhaustible you should rate this one

COMMODORE

Program *The Berks Trilogy* **Type** Arcade **Machine** C15 **Price** £6 95 **Supplier** CRL, CRL House, 9 Kings Yard, Carpenters Road, London E15 2UD



Program *Galactic Patrol* **Type** Arcade **Machine** Commodore 64 **Price** £1 99 **Supplier** Mastertronic 6-10 Paul Street, London EC2A 4JH

Program *Borrowed Time* **Type** Adventure **Machine** Commodore 64 **Price** £14 95 **Supplier** Activision Activision House 23 Pond Street, Hampstead London NW3 2PN

Program *Bump Set Spike* **Type** Simulation **Machine** Commodore 64 **Price** £1 99 **Supplier** Mastertronic as above

Pick of the week

Cave Adventure

Program *Very Big Cave Adventure* **Type** Adventure **Machine** Commodore 64 **Supplier** CRL, CRL House 9 Kings Yard Carpenter's Road, London E15

The *Very Big Cave Adventure* is my kind of game It s a genuinely funny (as opposed to embarrassing) parody of *Colossal Caves* and created by the only software house ever to be based on a girls school for grown-ups viz St Brides

The connection between *The Big Cave Adventure* and things girlish is only that your leader in the expedition is Trixie Trinian – prefect at St Brides and all round good egg St Brides claims that the *Very Big Cave Adventure* was the original before the other original adventure (it has merely been held back for reasons of taste) – now it is unleashed on the computer game buying public

The graph cs that illustrate most of the scenes are so-so the parser is fair but no more but all of this is beside the point

The point is that there is a reasonable joke in every screen and every so often, absolutely brilliant ones Any game which has as one of the solutions to its puzzles lobbing a odmb at a bull (rather than those complicated affairs where you have to get 12 different objects then assemble them in a certain order then say the magic word) is all right with me

There are specialised jokes for people familiar with the Crowther-Woods original and jokes for the more general computer fan (a sharpened ZX81 is one key object) A mammoth spoof and it works – I ve actually been playing it more intensively than any other adventure I've seen recently Quite cheap too

Program *Hocus Focus* **Type** Arcade **Machine** Commodore 64 **Price** £8 95 **Supplier** Quicksilva, Liberty House 222 Regent Street London W1R7DB

Program *Pilgrim* **Type** Adventure **Machine** Commodore 64 **Price** £7 95 **Supplier** CRL, CRL House 9 Kings Yard Carpenter s Road London E15 2HD

Program *The Berks Trilogy* **Type** Arcade **Machine** C16 **Price** £6 95 **Supplier** CRL Group PLC CRL House 9 King Yard Carpenters Road London E15 2UD

Program *Vidcom 64* **Type** Utility **Machine** Commodore 64 **Price** £4 95 **Supplier** Media Matters 23 – 25 Castlereagh Street London W1H 5YR

SPECTRUM

Program *Astro Cade* **Type** Arcade **Machine** Spectrum **Price** £4 50 **Supplier** S Green, 49 Beaumont Road Halesowen West Midlands



Compilations are fundamentally not exciting. After all they usually consist of well known games about which there is little new to say. Nevertheless all compilations are not the same. There are the never mind the quality feel the length of tapes like Argus's *30 Games* and there are the half dozen 'but they're goodies' *Off the Hook* type packages.

Astro Cade fills the gap by being half a dozen very dodgy games, but it is relatively cheap at £4.50. However the titles are cheap in more ways than one. These barely reach even early Mastertronic quality and are so unoriginal the only good thing to be said about them is that at least you'll already know how to play them.

The games are *Simeon*, the old match-the-colour-sequences game so often seen as a listing in magazines. *Caverns d'or* a simple cavern-based monster bash. *Bomber*, which is well *Bomber* the frustratingly addictive ie very boring demolish-the-buildings effort. *Zombie* is about running around and shooting. *Lune Rover* is scrolling landscapes and jump the potholes and kill things except that the graphics look like a *ZX81* and *Alien* is more space shooting.

The best of the games are fairly bad although you can't call it a rip off at the price. Even so, I'm not sure games like most of these here are even worth the loading.

Program *Castle Thade Adventure* **Type** Adventure **Machine** Spectrum **Price** £5.00 **Supplier** Spectrum Adventure Exchange Club, 4 Hilmarton Lane, Carluke, Lanarkshire ML8 5RT

Program *Hocus Focus* **Type** Arcade **Machine** Spectrum **Price** £8.95 **Supplier** Quicksilva as above

Program *Marhowne's Light* **Type** Adventure **Machine** Spectrum **Price** £2.00 **Supplier** K Soft 118 Kingsway Ossett, W Yorks WF5 8HQ

Program *The Spore* **Type** Adventure **Machine** Spectrum **Price** £2.00 **Supplier** K Soft as above

Program *Valkyrie 17* **Type** Adventure **Machine** Spectrum **Price** £7.95 **Supplier** Ariolasoft, 68 Long Acre Covent Garden London WC2E 9JH

Valkyrie 17 is not a new program it was originally released by Palace last year to some acclaim but not much effect. Now it has been resurrected by Ariolasoft.

With *Valkyrie 17* the art of the game is all in the plot and wit. The graphics are reasonable the text analysis fair, but those alone would not justify the game's existence. Sentences are single statement only, verb-noun in essence. The graphics are quite detailed and quickly drawn.

To the actual game: the plot concerns a secret Nazi device that is in danger of falling into the hands of a shadowy organisation known as Valkyrie 17. You play a sort of secret agent led into the mysterious affair by a series of strange telephone calls (present as an audio track on the b-side of the cassette). A dossier on Valkyrie 17 arrives and you are led to the Hotel Glitz on the shores of Lake Bruntz.

The whole thing is a very tongue in cheek full of low voiced blonds – some of them Aryan males, rather than femme fatales (though some are both) – and people speaking in heavy German accents. There are references to movies from the 40s and Philip Marlow style spy books. Indeed the game is a sort of tribute-come-parody of the spy genre.

Valkyrie 17 is exceptionally literate and witty in the 'slight smile rather than the hysterical mirth sense. For a rereleased game I think it could have been cheaper, but adventurers who like their adventures with style will find much to enjoy here.

Program *Wow Games* **Type** Arcade **Machine** Spectrum **Price** £9.95 **Supplier** War On Want Three Castles House 1 London Bridge St London SE1 9UT

There are many compilation tapes around not a few designed for charitable purposes, but nevertheless *Wow Games* deserves a plug. WOW is War on Want and it has produced a 14 game collection for the Spectrum.

They are *Spectrum Chess II*, *Bug Eyes*, *Pedro*, *Winged Warlord Mr Freeze Headdanger's heaven Wizard's Warrior Hellfire Hunchback II Horace and the Spiders Xavier Rupert and the Ice Castle*, *Cybertanks* and *Dr Franky and the Monster*. Of those there are a few gems half a dozen goods a few more okay and one or two absolute stinkers (*Pedro* gets my vote in this category).

The tape is worth while for anyone into basic arcade games – like *Bug Eyes* and *Dr Franky* – though there are some more complicated affairs like Rupert and the Ice Castle which has never actually been released before. Surprising really since it's jolly good.

Certainly worth £9.95 of anyone's money this compilation is one of the more interesting ones around at the moment.

Program *The Planter's Guide* **Type** Utility **Machine** Various **Price** £14.95 **Supplier** Phoenix Publishing 14 Vernon Road Bushey Herts WD2 2JL

Since I'm always pro any program that is out of the mainstream, I feel *The Planter's Guide* deserves a mention. It's a database plus a book with correlated information on over 1000 plants.

Now I know this doesn't sound very exciting but for those people who occasionally manage to leave their computer screens and venture out into the garden it's rather useful. The basic idea of the program is to help you choose plants appropriate to the soil and light conditions for any particular section of the garden.

It works both ways – either you can set up your growing conditions and see what suggestions the database comes up with or you can consult the accompanying book to find a plant you like and find out what conditions it requires. Often these sort of specialist programs are very dodgy indeed – full of bugs and bad presentation but *The Planter's Guide* is excellently put together with neat displays and well error trapped. You get versions for Amstrad BBC Commodore and Spectrum on the one tape and there are full instructions on saving your edition to disc or microdrive.

The Planter's Guide is a little expensive at £14.95 but could be invaluable for the ardent gardener.



Charts

Top Twenty

1	(2)	Bomb Jack *(Spectrum/C64)*	Elite
2	(5)	Commando *(Various)*	Elite
3	(7)	Form One Sim *(Various)*	Mastertronic
4	(10)	Com Hits 10 (2) *(Various)*	Beau Jolly
5	(6)	Last V8 *(C64/Amstrad/Atari)*	Mastertronic
6	(–)	They Sold (2) *(Sp, C64/Amstrad)*	Hit Squad
7	(4)	Way of the Tiger *(Sp, Atari, Msx)*	Gremlin
8	(3)	Green Beret *(Sp)*	Imagine
9	(8)	V *(Sp, C64)*	Ocean
10	(9)	Finders Keepers *(Various)*	Mastertronic
11	(8)	One Man and his Droid *(Various)*	Mastertronic
12	(–)	Heavy on the Magic *(Sp)*	Gargoyle Games
13	(11)	Action Biker *(Sp, C64, C16, Atari)*	Mastertronic
14	(–)	Turbo Esrit *(Sp, Ams)*	Durell
15	(–)	Spellbound *(Sp, C64, Ams)*	Mastertronic
16	(–)	Winter Olympics *(C16, BBC)*	Tynesoft
17	(17)	Superbowl *Sp, C64, Msx)*	Ocean
18	(–)	Alien Highway *(Sp, Ams)*	Vortex
19	(–)	Bandits at Zero *(C16)*	Mastertronic
20	(–)	Shrinking Fireman *(Sp)*	Mastertronic

Bomb Jack – new no 1

Formula One Simulator – 33 weeks in the Top 20

Top Tens

All figures compiled by Gallup/Microscope

Amstrad

1	(3)	Last V8	(M'tronic)
2	(8)	Sandazzy	(Electric Dreams)
3	(1)	Into Oblivion	(M'tronic)
4	(–)	They Sold (2)	(Hit Squad)
5	(7)	Way Of The Tiger	(Gremlin)
6	(10)	Formula One Simulator	(M'tronic)
7	(8)	Gel Dealer	(PSS)
8	(–)	Alien Highway	(Vortex)
9	(–)	Turbo Esprit	(Durell)
10	(9)	Comp. Hits 10 Vol 2	(Beau Jolly)

Heavy on the Megick – new entry

Commodore 64

1	(–)	Bomb Jack	(Elite)
2	(3)	Superbowl	(Ocean)
3	(–)	They Sold (2)	(Hit Squad)
4	(2)	V	(Ocean)
5	(4)	Uridium	(Hewson)
6	(7)	Phantom of Aster ds	(M'tronic)
7	(10)	Zapp Sizzlers	(Gremlin)
8	(5)	Kane	(M'tronic)
9	(–)	War Play	(Anco)
10	(–)	Comp Hits 10	(Beau Jolly)

Atari

1	(–)	Last V8	(M'tronic)
2	(3)	One Man & His Droid	(M'tronic)
3	(2)	Action Biker	(Ueas)
4	(–)	Tutankham	(Unex)
5	(6)	Fighter Pilot	(Digital Int)
6	(–)	Football Manager	(Addictive)
7	(4)	Chimera	(Firebird)
8	(7)	Spy vs Spy 2	(Databyte)
9	(10)	Smash Hits 4	(English)
10	(–)	Steve Davis Snooker	(Cds)

BBC

1	(1)	Commando	(Elite)
2	(3)	Karate Combat	(Superior)
3	(2)	Winter Olmpics	(Tynesoft)
4	(10)	Comp Hits 10 2	(Beau Jolly)
5	(–)	Phantom Combat	(Doctor Soft)
6	(8)	Tennis	(Bug Byte)
7	(6)	Citadel	(Superior)
8	(–)	Fist	(Melbourne House)
9	(5)	Strike Force Harrier	(Mirrorsoft)
10	(5)	Yie Ar Kung Fu	(Imagine)

Spectrum

1	(1)	Green Beret	(Imagine)
2	(3)	Bomb Jack	(Elite)
3	(–)	Heavy On The Magik	(Gargoyle)
4	(4)	Way Of The Tiger	(Gremlin)
5	(8)	Shrinking Fireman	(M'tronic)
6	(2)	V	(Ocean)
7	(–)	Cyberun	(Ultimate)
8	(9)	Turbo Esprit	(Durell)
9	(18)	Devil's Crown	(M'tronic)
10	(–)	Alien Highway	(Vortex)

NEXT WEEK

If you liked the extra reading provided by this week's special supplement, then don't miss next week's issue – because there'll be another one

This time, the supplement will be looking at all aspects of the educational potential of your micro – an area often neglected in the consumer press

● Mind your Language

A survey of programs designed to improve your French, German and Spanish – how effective are they?

● Adult Education

You don't have to be at school to learn from the computer

● Mirrorsoft

A profile on the company that put the Mr Men on the micro

● Science now

Hi-tech software for the computer age

● Dealer Guide

A comprehensive nationwide list of specialist educational dealers

Don't miss out on *Popular* next week

The Hackers

Hello Aunt Gwen. Well, did you buy a computer to help you with your accounts?

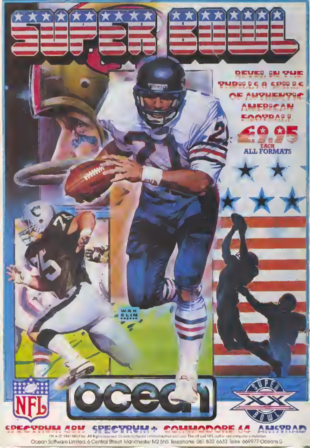
Yes Donald.

Well, I expect you made the usual beginner's mistake of not getting one powerful enough for the application.

No, I don't think so Donald.



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